

AMERICAN ARTISAN

SEPTEMBER 1958
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..The Magazine of
CENTRAL RESIDENTIAL AIR CONDITIONING
WARM AIR HEATING • SHEET METAL CONTRACTING

ON-THE-SPOT sales tool shows heating prospects the advantages of using quality instead of price as guide for buying comfort



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A SPECIAL SECTION REVIEWING TWO PRODUCTIVE SELLING AIDS

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AND A FULL COMPLEMENT OF REGULAR FEATURES INCLUDING:

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*picture of
a man
making extra
profit*

Attach face after plastering to
eliminate clean-up time

INSTALLING

Air Control

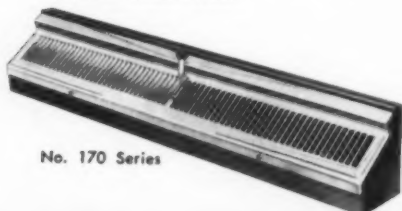
NO. 188 SERIES BASEBOARD PERIMETER DIFFUSER



Adjusto-Bottom for installing in any
position over duct



Patented Rotary Damper — an exclu-
sive Air Control feature



No. 170 Series

YOU CUT INSTALLATION TIME three important ways: (1) Face snaps off for easy access in attaching diffuser — can be replaced *after finished floor is laid and wall is plastered* to assure attractive installation with no clean-up time. (2) Adjusto-Bottom permits installing in any position over duct. (3) Famous Adjusto-Stop allows system to be balanced at face of diffuser.

YOU MAKE NO PROFIT-CUTTING CALL-BACKS because unit meets most exacting demands for modern home heating or cooling. Patented *Rotary Damper* assures customer satisfaction under all operating conditions. Available in beautiful beige prime coat — types and sizes for all installations.

FREE — New '58 Catalog showing complete Air Control line . . . the Registers, Grilles and Diffusers most likely to be copied. See your jobber or write to us.



NOTE: For same installation features in special economy unit, see Air Control's No. 170 Series Baseboard Perimeter Diffuser with conventional damper at left. 34 sq. in. free area.

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158 Center St. Coopersville, Michigan

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Here's a case where the best costs no more—so why settle for substitutes that won't meet standards set by you or your customer? Genuine Sundstrand parts are available at Sundstrand Certified Service Stations carefully assigned across the nation and displaying this decal.

Quality parts and expert service by factory trained specialists are yours whenever you bring your fuel unit to a Sundstrand Certified Service Station. Because these service stations are located

wherever Sundstrand-equipped oil burners go across the nation, you are assured of quick, easy, economical service that contributes materially to customer satisfaction. Heating contractors, as well as oil burner manufacturers, have come to know that the combination of original quality and certified service, available only from Sundstrand, is the best insurance for continued heating comfort. It's no accident that year after year Sundstrand remains *first in fuel units*.



SUNDSTRAND HYDRAULIC DIVISION

of Sundstrand Machine Tool Co., 2210 Harrison Ave., Rockford, Illinois—Eastern Sales Office: 89 Summit Ave., Summit, N. J. • Fuel Units Made in Canada by John Inglis, Ltd., 14 Strachan Ave., Toronto; in Sweden by Sundstrand Hydraulic AB Stockholm; in France by R.S. Stokvis, et Fils, S.A., 20-22 Rue Des Petits-Hôtels, Paris

AMERICAN ARTISAN

SEPTEMBER 1958

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Merged with American Artisan are "Warm Air Heating" and "Furnaces and Sheet Metals"

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Write up proposals that wrap up sales

Better Business Guide No. 8

THE proposal is one of the mightiest weapons available to the dealer who's selling modernization. Logically organized and showing thorough analysis of the prospect's needs, it simplifies the salesman's job... gives him ammunition against price-slice competitors.

Confidence Is the Key

Actually, the value is psychological as well as practical. The prospect tends to put his faith in the company that presents its offer in writing. Then too, recent studies show that the typical home owner believes home comfort systems are standardized — does not consider individual problems and desires. The professional, detailed proposal shows him that his money is well spent to meet his particular requirements.



Of course, there's more to it. It is difficult for the layman to grasp the competitive values you offer. Put 'em on paper. Let him see and study a full description of the proposed installation, showing how and why it justifies the cost.

You'll relieve your salesman of this job and establish a standard that takes more than price-cutting to overcome. Also, this form becomes a contract so that there is no misunderstanding by either party as to what work is to be done.

Always Ring Twice

Experienced heating-cooling salesmen find that two calls are usually needed to do the job right.

First call: Your man makes a comfort survey, punctuated with inquiries about past performance. (A good survey outline is one that gives him material for subtle selling as he takes it.) But there is no mention of price. Rather, he leaves with a promise that, "Our engineering department will analyze this material, and I'll return shortly with our findings."

He should make a definite appointment for the follow-up call. For interim protection, have him emphasize that *only* through such careful study can an accurate recommendation be given.

Second call: Within 48 hours, if possible, the salesman returns with

a neat presentation that includes the calculation, system layout, documented price analysis and the all-important order form. Assemble them in a folder of the type available at any stationery store or from your manufacturer. If you wish, add such materials as product literature, advertising reprints, letters from satisfied customers or photos of other installations (preferably in the same neighborhood). An impressive finishing touch: the prospect's name typed on a label and placed on the cover.

Easy Does It

There's no great mystery, no great effort to compiling an effective personalized proposal. Standard forms and literature available from your manufacturer produce an attractive, impressive brochure. Use your own ingenuity to make it sell your services, too. Your Mueller Climatrol representative will gladly show you the key materials... work with you in developing your presentation. Why not get in touch with him, or write to us directly.



READY-MADE MATERIALS to make up your proposal are those offered by Mueller Climatrol: (1) Climate-test® heating or cooling survey forms, (2) attractive proposal folder, (3) summary form, (4) proposal and acceptance contract form, (5) warranties and (6) product literature.

Mueller Climatrol®

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DIVISION OF WORTHINGTON CORP.

the editor's notebook

Thumbing Through This Month's Artisan

... we find a 16 page special section devoted to a review of two popular and effective sales tools developed by American Artisan, the *Standards for Rating Heating Systems*, and the *Modernization Guide* and its three check-lists for determining the extent of home owners' heating, air conditioning and sheet metal modernization requirements. We review the development of the standards and the check-lists, study case histories suggesting effective uses of these tested sales aids, and note some recommendations for their promotion by dealer-contractors, wholesalers and manufacturers to upgrade the quality of and profit from warm air heating, residential air conditioning and sheet metal work, as well as to find leads and close more sales. Finally, we tie the two sales tools together to produce a combination sales punch which probably has never been surpassed in the course of the industry's search for markets for its goods and services.

Cooling

... and we continue the modernization theme with a discussion of designing air distribution systems for old homes which were built before air conditioning became a reality. Author S. W. Reid suggests we *Weigh Advantages vs Limitations in Air Conditioning Row Houses*, and points out some of the problems to watch for in adding cooling systems in this type of structure which was popular 50 years ago and now constitutes a likely market for modernization. We see that zoning is called for in most of these homes



When you need a

flame-
resistant
tape use

F-R ARNO DUCTAPE

Flame-Resistant Arno Ductape complies with all building codes that require the use of fire-resistant duct tape. It continues to hold firmly at temperatures of 350-400 deg. F. Even at higher temperatures, while subject to charring, it will not support flame. Of course, it meets ASTM standards.

Like all other Arno Tapes, it sticks instantly and does not dry out or lose its grip.

Seal all ducts with Arno Ductape. Use Flame-Resistant Ductape where extra fire protection is needed.

Test sample on request—specify F-R.

Sales Offices

Atlanta—2258 B Cascade Rd. S.W.
Detroit—12915 W. Eight Mile Road
Fort Worth—2724 Tiller Street
Los Angeles—3225 East 48th Street
Minneapolis—401 Plymouth Ave. North
New York—104 West 17th Street

Arno

ADHESIVE TAPES, INC.

Subsidiary of The Schall Mfg. Co., Inc.

Arno Adhesive Tapes, Inc., 4110 Ohio Street, Michigan City, Indiana

the editor's notebook

(Continued)

and we study several ways of designing the zone system. We note also that several of the typical structural features, such as high ceilings and large, open halls and stairways, provide definite advantages to following the rules of good practice.

Outlets

... we get pointers on where to *Locate Outlets to Handle Varying Basement Heat Loads* from Guy Voorhees who first recommends selling the home owner on zoning, then suggests alternate methods for sizing and positioning air distribution components to do the best possible basement heating job compensating for seasonal and structural effects on heat losses. We find the discussion centered on heating a basement for occupancy rather than merely for warming the floor above, and we take on the accompanying comfort problems, making compromises where necessary but selecting the best choice in each case after thorough analysis of the problem from the standpoint of comfort.

Panels

... and we see how *Stainless Steel Curtain Walls Dress Up New Office Building* which combines the concentric squared panels with masonry construction. Going over the record we note that 214 panels of 20 ga, type 202 stainless steel, totaling about 20,000 lb, went into the building, and that the attractive designs on the panels were produced by inexpensive dies in a hydraulic press. We observe that this type of construction, which is gaining in popularity with architects, is well within the scope of most sheet metal shops.

AN OPEN LETTER to *Nu-Way* and *Sundstrand* oil burner customers



Gentlemen:

We wish to announce that the Nu-Way Corporation has purchased controlling interest of the Sundstrand Engineering Company, Rockford, Illinois. As a customer, you will be interested to learn officially of the nature of this change.

Sundstrand, now to operate as a division of Nu-Way, will remain a separate entity and its line of burners and identity will be maintained. The burners will be manufactured in our Rock Island and Milan, Illinois plants. Mr. Gustafson, former principal of Sundstrand, will be manager of the division and will devote full time to serving his customers.

Mr. Gustafson will continue his residence in Rockford; however, he will be in very close contact with the Nu-Way Production and Engineering departments at all times. Production facilities at Rock Island are quite ample and we would be most pleased to show you through the plant any time.

We are proud to make this association and we will strive through integrity and service to justify the business which you, as our customers, have given us in the past.

Very truly yours,

THE NU-WAY CORPORATION
Rock Island, Illinois

the editor's notebook

(Continued)

Now's the Time to Revamp Mailing Lists

DIRECT MAIL has proven to be a most economical and effective way of reaching prospects. However, on the first of August, the cost of mailing was increased from 33 1/3 to 50 percent in some classifications. This action on the part of the post office has brought to the attention of a number of people using this service the importance of maintaining an accurate mailing list. List checking is usually an activity that is periodically considered and then postponed. The increase in mailing costs has emphasized the importance of keeping prospect lists up to date.

It's been interesting to note the large number of inquiries we've received since August 1 from many of the people who send us news releases. These people are asking about the specific types of news items we are interested in so that they may schedule their mailings to us more accurately.

There are a number of ways in which a heating-air conditioning dealer-contractor can check his mailing list. One is by rubber stamping third or fourth class mail with the statement: "Form 3547 requested."

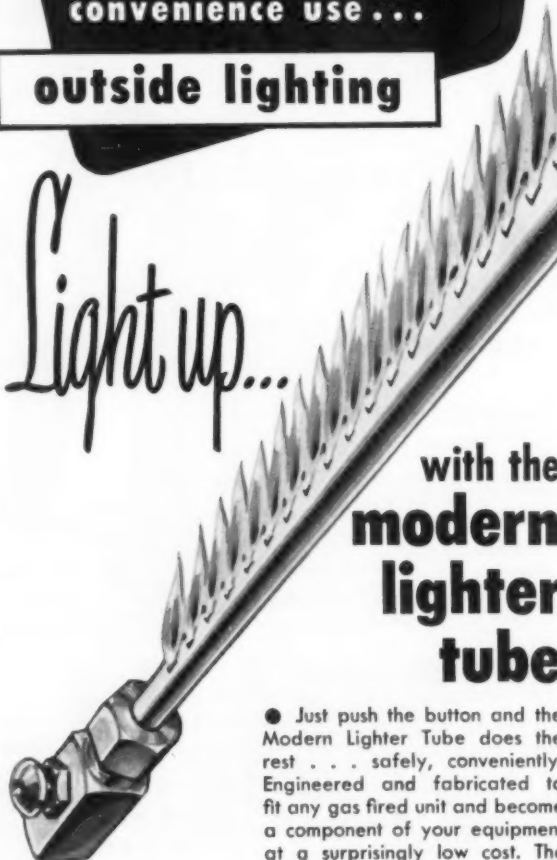
If the mail is undeliverable due to a change in address, this means that the post office will return the mail and charge 5 cents for each piece returned. In this manner, it is possible for a dealer-contractor to check either his phone book or city directory to see if the customer has changed his address. By correcting his mailing list or deleting the name from his file, he can save the repetition of mailing costs that occurs when mail has not been forwarded.

Be MODERN—
with all your gas fired
appliances...for safety,
dependability and
convenience use...

outside lighting

Light up...

with the
**modern
lighter
tube**



● Just push the button and the Modern Lighter Tube does the rest . . . safely, conveniently. Engineered and fabricated to fit any gas fired unit and become a component of your equipment at a surprisingly low cost. The Modern Lighter Tube is widely accepted by manufacturers and utilities in areas where "outside lighting" is a requirement . . . be MODERN, investigate the advantages of this advancement in gas fired equipment.

(U.S. Pat. No. 2728384, Can. Pat. No. 676802).



Write for literature.

**MODERN
LIGHTERS**

INCORPORATED

NORTHVILLE, MICHIGAN

FORMERLY

MODERN MATERIALS COMPANY

the editor's notebook

(Continued)

The cost of out-of-date mailing lists is much higher than might be expected because of the work that is wasted in printing, folding, stuffing, addressing, etc. These costs are in addition to the postage. Thus the increase in postal rates may be serving at least one good purpose — it reminds everyone of the importance of giving his mailing list a complete overhaul.

Warm Air Heating Man U.N. Delegate to Russia

EACH YEAR we receive a number of post cards from friends on vacation. This year, Lee Wagener, Peoria, Ill., dealer-contractor, sent us three — all from behind the iron curtain. It seems Lee was part of a United Nations business delegation sent to Russia to explain technical points on how we do it in America. Lee Wagener was a wise choice for this mission. Lee operates a warm air heating-residential air conditioning business that does about a half million dollars volume annually, and through a complete set of books, he knows his costs and is able to earn a good profit for his skill.

We were kept posted by Lee on each major city he visited. He sent postal cards from Moscow, Prague and East Berlin, before he crossed into the zone of western influence. We are looking forward to visiting with this traveling ambassador of the warm air heating and air conditioning industry when he returns to the U.S.A.

The cultural contrasts between our two nations must be reflected in the types of heating systems used. If Lee has any personal comments that may be of interest, I'll report them to you in this column.

America's Most Complete Family of Air Conditioning Thermostats!

General Controls continues to set the pace in creating the kind of *advanced design* thermostats that afford maximum selectivity in air conditioning thermostats. Not only do General Controls thermostats please the homeowner with their beauty and simplicity of line, they also signify *quality*—and prove it by delivering the top performance engineered into systems and related equipment. Consult your nearby General Controls branch office for complete details on the many air conditioning thermostats available.

ALL WITH MODERN
MERCURY
SWITCH
DEPENDABILITY...

118 FUNCTION VARIATIONS
TO CONTROL ANY SYSTEM

- COOL, HEAT, FAN, AUTO, OFF, RESET SWITCHING FUNCTIONS
- SINGLE OR TWO-STAGE HEATING WITH SINGLE OR TWO-STAGE COOLING
- HEAT AND COLD ANTICIPATION
- DAY AND NIGHT CLOCK PROGRAMMING
- SINGLE DIAL OR TWO DIAL TEMPERATURE SELECTION
- MANUAL OR AUTOMATIC CHANGEOVER

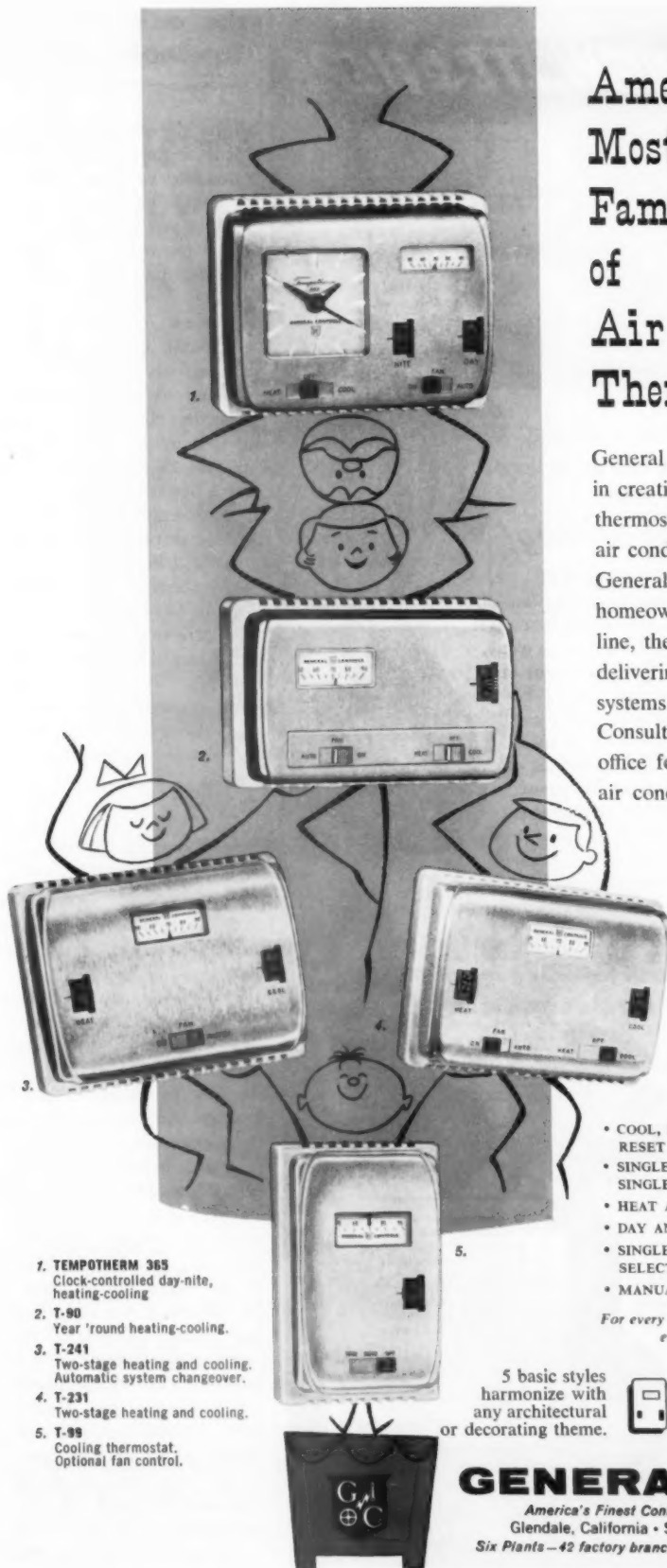
For every heating and cooling requirement: gas, oil, coal or electric; evaporative, chilled water and heat pump systems.

5 basic styles harmonize with any architectural or decorating theme.



GENERAL CONTROLS

America's Finest Controls for Home, Industry, and the Military
Glendale, California • Skokie, Illinois • Guelph, Ontario, Canada
Six Plants—42 factory branch offices serving the United States and Canada



1. **TEMPOTHERM 365**
Clock-controlled day-nite, heating-cooling
2. **T-90**
Year 'round heating-cooling.
3. **T-241**
Two-stage heating and cooling. Automatic system changeover.
4. **T-231**
Two-stage heating and cooling.
5. **T-99**
Cooling thermostat. Optional fan control.

the editor's notebook

(Continued)

When You Delegate . . . Choose Right Employee

A GOOD manager will try to train his employees by delegating responsibility and make work assignments that will develop unused ability. Dr. Donald A. Laird, former head, psychology department, Colgate Psychological Laboratory, says, "To find out if a man is able to handle a job, give him a crack at it. This direct approach is not without risk, but the risk can be minimized by such expedients as making the first delegations brief and self-terminating."

Here are five tips that will guide you in finding the right man to delegate to:

- 1) Find the man with unused abilities.
- 2) Delegate to wide range of people.
- 3) Find the not-so-obviously qualified individual.
- 4) Find the man with a weakness.
- 5) Delegate to the problem employee.

AGA Contest Spurs Gas PR Programs

THE PUBLIC has learned to rely upon an industry to broadcast facts about its services and products. It seems as if the industry that does the most effective selling job reaps the best profits through increased sales and public acceptance.

A company can keep the public informed in many ways—by advertising, of course, and also through participation in civic affairs. There are many other ways, most of which can be classified as public relations. The American Gas Association has recognized the importance of good public relations programs and has been giving recognition to gas in-

IT'S NEW...IT'S HERE



ODF* TANK GAUGE gives exact reading level of oil in tank *at point of delivery!*

Located outside of building at fill pipe, this new, easy-to-read fraction calibrated, pressure-tight gauge shows the exact level of oil in tank at all times! Saves costly, time consuming trips to basement and unnecessary unreeling of hose . . . Permits delivery without disturbing customer and eliminates spills as there is a "stop filling" indicator on calibration. Made of weather-proof materials throughout with thermometer indicator securely encased in plastic dome that will not fog or cloud up. No gears, cams, magnets, tapes or intricate mechanisms to get out of order. Write for complete information and low cost unit prices on this modern "delivery point" remote reading gauge today.



KRUEGER Sentry GAUGES
GREEN BAY • WISCONSIN

the editor's notebook

(Continued)

dustry companies which have made outstanding contributions to developing public relations.

This year AGA will present a trophy to the company considered to have made the year's outstanding accomplishment in solving a specific public relations problem.

The activity must have contributed to the development of better public opinion and understanding of the company, of gas service, or of the gas industry as a whole.

The trophy and an engraved certificate of achievement will be presented at the AGA convention in Atlantic City in October.

I believe it would be a good idea if segments of our industry were to conduct similar programs to encourage public relations on a wider scale. Everyone would benefit.

Says Country Needs More Apprentices

UNEMPLOYMENT may be a factor today and for some months to come, but the current situation shouldn't interfere with our industry's plans for the future, and the training of apprentices to install equipment is definitely related to the industry's future. I agree with Douglas Whitlock, chairman of the board of the Structural Clay Products Institute who said, "There is a tremendous demand for trained, competent craftsmen to meet the needs of our expanding economy." Mr. Whitlock was addressing the Fourth Minnesota Apprenticeship Conference held recently in St. Paul. According to U. S. Labor Department figures, he said, the number of young men under the age of 25 who are skilled craftsmen dropped 28 percent between 1951 and 1956. "Economists tell us that

**MORE and MORE
SHOPS are USING**



2



LOCKFORMERS
profitably...

HERE'S WHY: Lockformer "A", in this instance and in addition to built-in Pittsburgh Rolls, has Drive Cleat Rolls mounted on auxiliary shafts, the Slitting Attachment mounted above the main work table. Lockformer "B" has Double Seam Rolls mounted on the auxiliary shafts, and a Flanging Attachment mounted above the main work table.

Even in a fairly large shop, this set-up eliminates "waiting", for two men can roll Pittsburghs at the same time. No time is lost in "change-over" between the two sets of auxiliary rolls indicated or the two attachments mentioned. You're *always* set up to do five different forming or cutting operations, and you have an "extra" Lockformer available for peak production periods.

You *know* your present Lockformer is a profitable investment; another Lockformer will cut your fabrication costs still further!



ONE MAN WITH A LOCKFORMER
MAKES MORE PITTSBURGH LOCKS
THAN SIXTEEN MEN WITH EIGHT BRAKES



Write for your free copy of the new
Lockformer Catalog (AND PRICE LIST)

THE LOCKFORMER CO.

Dept. A 4615 W. Roosevelt Road • Chicago 50, Illinois
In Canada: Brown Baggs Foundry & Machine Co., Ltd., Hamilton, Ont.

the editor's notebook

(Continued)

our growing population and expanding economy will require the United States to boost its output of goods and services 33 percent by 1965 and another 50 percent by 1975," he stated. "To reach these goals, we will have to add another 10 million jobs to the work force by 1965 plus another 10 to 15 million by 1975."

He urged that both labor and management take steps to impress the young men of America with the dignity and historic pride of workmanship in the skilled trades.

VA Home Prices Warrant Good Heating Systems

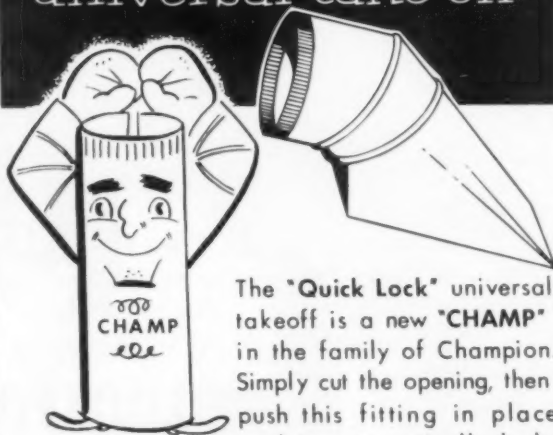
Too often dealer-contractors have thought of houses built under VA loans as being low priced homes and have felt that bids covering the costs of good air distribution systems and adequate equipment would be too high to be considered. This is far from correct. Sumner G. Whittier, Administrator of Veterans Affairs, said that during 1957 veterans paid an average of \$13,800 for their GI homes. He said the figure is based on a sample survey of GI loan home purchases during 1957, and includes both new and used homes. New houses accounted for 72 percent of all GI home loans closed during the year.

The average new GI home sold for \$14,335, and more than 40 percent fell within the \$12,000 to \$15,000 price range. Used homes sold on GI loans had an average price tag of nearly \$12,100, and less than one-third were in the \$10,000 or lower bracket.

Appraisal requests for proposed GI homes increased 195 percent to a total of 24,800 during April, compared with 8406 received in March.

the new "CHAMP"

Quick-Lock universal take off



The "Quick Lock" universal takeoff is a new "CHAMP" in the family of Champion. Simply cut the opening, then push this fitting in place and it automatically locks.

CHAMPION "TEN FOOTER" SNAPLOCK PIPE

The "Ten Footer" snaplock pipe is now available along with the popular "Five Footer" in light gauges. The "Two Footer" is available in gauges 24 through 30. All lengths, sizes and gauges are shipped nested in sturdy cartons.

**DO IT BETTER AND
FASTER WITH
CHAMPION!**

Send for the new
Champion Catalog
No. 59

AVAILABLE THROUGH
LEADING JOBBERS



CHAMPION

CHAMPION FURNACE PIPE COMPANY
120 MORTON ST. PEORIA, ILLINOIS

the editor's notebook

(Continued)

The sharp rise in appraisal requests will be reflected during coming months in a greatly increased number of both GI starts and home loan applications, Mr. Whittier said.

Analyzes Cost of Average Sales Call

HAVE YOU any idea of what the average cost of a sales call is? It will of course vary with each company and each type of operation, but the formula is pretty much the same. Recently Milton Hinden, Duro-Dyne Corp., asked the question: "Do you think that doctors' calls are expensive?" He then pointed out that salesmen's calls are expensive too and went on to show how to figure the cost per call. Here is his formula:

If a salesman makes calls on 200 days per year and averages eight calls per day, that's 1600 calls per year. And if the salesman earns \$8000 per year, his cost to the company for salary, vacations, sick leave and expenses, probably amounts to between \$10,000 and \$12,000 per year.

That is about \$7 per call.

To get the most out of each call, a salesman should:

- 1) Diagnose the customer's needs.
- 2) Be an expert in his field.
- 3) Increase the number of calls made each day.
- 4) Recommend specialists on important problems. (Factory representatives are usually ready to solve tough problems. Salesmen should take advantage of this valuable service whenever they find it necessary.)

Clyde M. Barnes

EDITOR



Bethcon coating stays tight in the toughest forming jobs

You can make snap locks, Pittsburgh lock seams or some special seam of your own without damaging the zinc coating on a Bethcon sheet. That's because Bethcon is galvanized by a continuous process which bonds the zinc to the base metal much more tightly than conventional methods.

This same process also distributes the zinc evenly over the sheet, producing a finished sheet of uniform thickness and appearance. It also eliminates the bead usually found on the drip ends of hot-dipped sheets.

Another advantage of the Bethcon continuous galvanizing process is the remarkable combination of strength and ductility in the sheet. That's because the basic steel receives a special annealing in the continuous line. You'll find a

Bethcon sheet neither too soft nor too stiff, but just right for easy workability and a sturdy end-product.

You can specify Bethcon in any gage from 13 on up, in plain steel or copper-bearing (Beth-Cu-Loy) for extra corrosion-resistance. If you have not yet worked with Bethcon, you might like to talk with someone who has. Or perhaps you'd prefer to discuss it with one of our own men. Either way, you'll get prompt attention by getting in touch with our nearest district sales office.

You really ought to try Bethcon. Why not call us now?

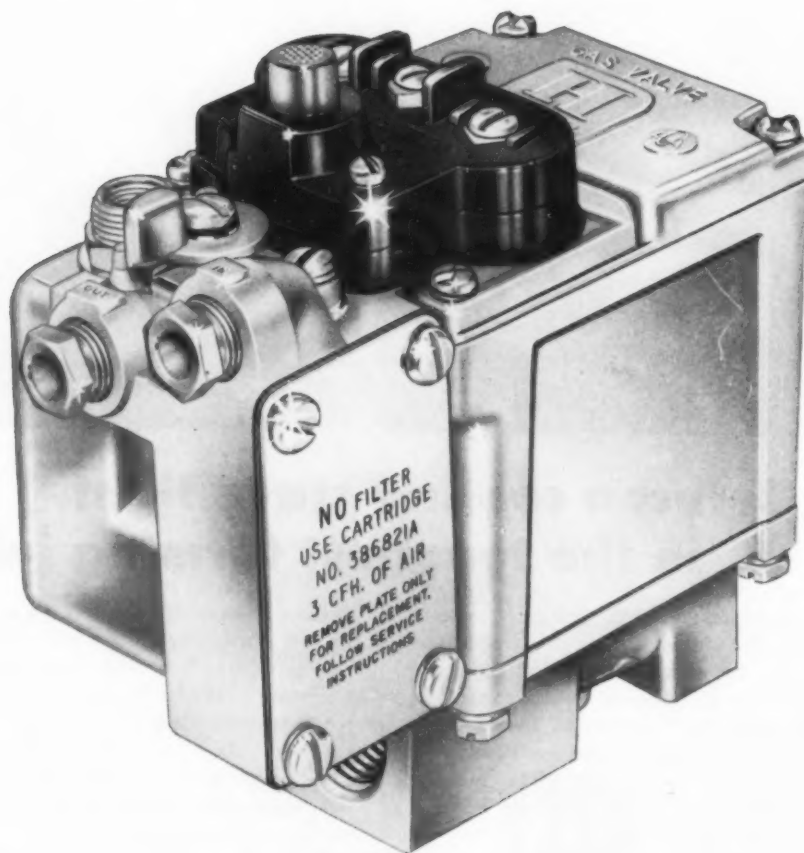
BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by
Bethlehem Pacific Coast Steel Corporation
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BETHLEHEM STEEL



SIM



V81 Silent Gas Valve with space-saving, switch-type pilotstat that eliminates cost of installing and wiring separate pilotstat. Has all the universally accepted features of the **V80 Silent Gas Valve** which combines advantages of solenoid and diaphragm valves, plus: oil-cushioned plunger, no bleed connections, operating parts sealed out of gas stream, and easy installation.

PLE

Simple—that's your job when you don't have to spend hours looking for a special control. When you handle all-Honeywell control systems, it's doubly simplified because you deal with just one line, one supplier. What's more, Honeywell's way of doing business backs you up 100 percent. You get reliability; easier installations; fast help when and where you need it, from 112 sales-service offices; educational programs for your staff—and above all, far fewer costly call-backs. Added up, these benefits mean more profit from every job when your units have all-Honeywell controls designed to work together. Ask your Honeywell man to prove it.

For information on Honeywell's complete line of control systems for heating and cooling, call your local Honeywell office. Or write Minneapolis-Honeywell, Dept. AA-9-20, Minneapolis 8, Minnesota. Honeywell sales and service coverage is world-wide.

Honeywell



First in Control

BETTER AIR CONDITIONING FOR EVERYBODY



EVERYWHERE

Which is the best way to heat a house?

That depends on the house. The size, the construction, the kind of architecture make big differences. And there's another important point. Is air conditioning to be added later? Whatever the heating or air conditioning need, a Carrier dealer has the equipment to meet it. (Four of the many choices a Carrier dealer can offer his prospects are shown at the right.) Furthermore Carrier dealers are the best trained heating and air conditioning specialists in the business. Would you like to join the ranks of prospering Carrier dealers? Call the nearest Carrier distributor or write to Carrier Corporation.

It's time to call Carrier. You'll find your Carrier distributor's name in the Classified Telephone Directory. Carrier Corporation, Syracuse, New York.



For homes with basements—A Carrier Winter Weathermaker* occupies less space than conventional furnaces. It's a "Furnace with a Future" because cooling is easily added later. Repeat business for you.



For homes without basements—A downflow Carrier Winter Weathermaker is ideal for homes with slab or crawl space foundations. Cooling coil can be quickly inserted under furnace. Repeat business for you.



For small compact houses—This horizontal Carrier Winter Weathermaker occupies no living space. It may be located in the attic or the crawl space. Cooling coil can be built into the ductwork. Repeat business for you.



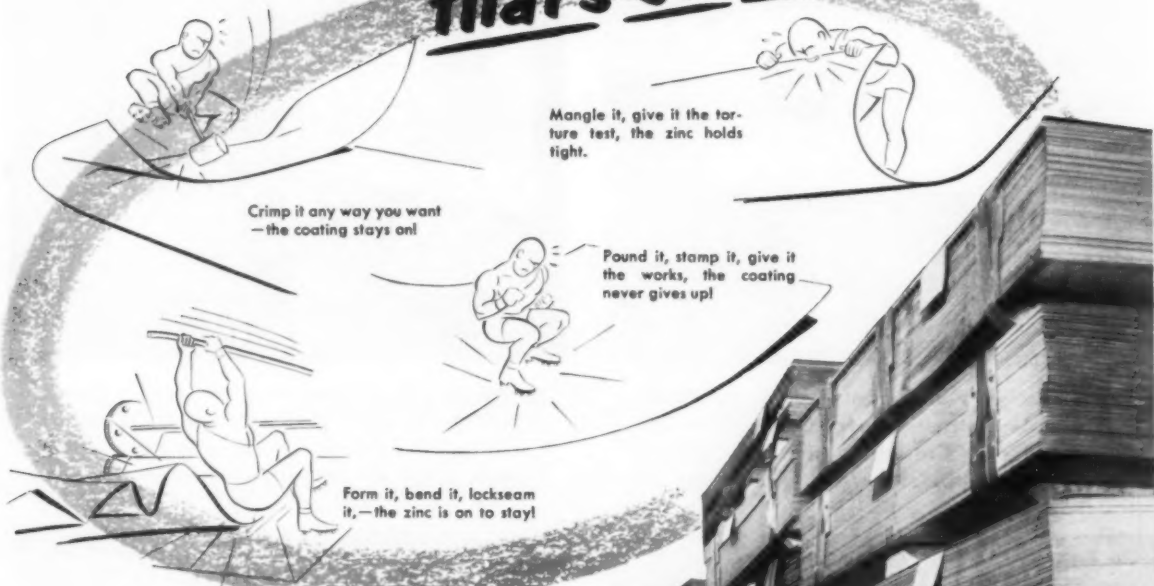
For large houses—The Carrier oil-fired lowboy Winter Weathermaker was designed for demanding heating jobs. Cabinet on top makes the addition of cooling coils simple. More repeat business for you.

*Reg. U.S. Pat. Of.

Premier...

the galvanized sheet with
the zinc coating...

that's on to stay



Crimp it any way you want
—the coating stays on!

Mangle it, give it the torture test, the zinc holds tight.

Pound it, stamp it, give it the works, the coating never gives up!

Form it, bend it, lockseam it,—the zinc is on to stay!


Work it to the limits of the steel, try your most complicated forming on it . . . give it the toughest job in the shop . . . you'll find the zinc coating on PREMIER Galvanized Sheets is on to stay.

It will not chip, flake, crack or peel. You can bend it, stamp it, crimp, lockseam, roll form, solder and weld any way you want . . . the coating stays right on the steel.

PREMIER Sheets are strong, to take rough treatment, but ductile to form easily. The sparkling bright finish reflects the permanence and inner quality that mean good looking jobs.

Galvanized by the most modern continuous process PREMIER Galvanized Sheets *have the tightest zinc coating ever.*

PREMIER Sheets and Coils are available in wide range of gauges and widths for immediate shipment. Call today for the steel you need.



Call Great Western: HEmlock 4-5800



**GREAT WESTERN
STEEL COMPANY**

ESTABLISHED 1918

General Office and Plant:

2300 W. 58th St., Chicago 36, HE 4-5800

Milwaukee Division: 2475 W. Hampton Ave., Hilltop 4-3092

REPRESENTATIVES IN PRINCIPAL MIDWESTERN CITIES



Quality...

Service...



Complete line...

plus Sales Aids...

EVERYTHING
You Need
to build
Bigger Business!

PROVED by 50 Years of Experience
in the Home "Comfort-Conditioning"
Field—

Majestic Winter & Summer Air Conditioning Equipment



**SIMULATED
BRICK TOP**

**APPROVED
BY U/L**

**ALL METAL—
Easy To Install**

Majestic THULMAN CHIMNEY

Save up to ½ on chimney costs with this efficient pre-packaged chimney that hangs on joist for easy installation. U/L approved for all fuels and zero clearance in buildings constructed of any material!

**CLEARANCE
is BUILT-IN**



**GAS or OIL
FURNACES**



**SUMMER AIR
CONDITIONERS**



**COMPLETE
ALL-YEAR MODELS**

FORCED WARM AIR FURNACES

Majestic offers gas or oil-fired winter air conditioners in such a wide variety of models that you can easily install *system-engineered comfort* in any home, regardless of its size, style, or design! All the benefits of Majestic's years of research and engineering—greater efficiency, automatic operation, quietness, compactness, and economy—are the outstanding reasons why there has been such enthusiastic acceptance of this complete line. Models from 76,000 to 400,000 BTU output; in up, down, or horizontal flow designs.

MATCHING COOLING UNITS

Majestic's matching self-contained or remote air conditioners are the perfect answer for economical, automatic all-season "comfort conditioning". Matching twin units or add-on installations are available in 2, 3, or 5 ton self-contained water-cooled models or remote air-cooled units. All are designed for simplified installation and years of dependable operation.

"SINGLE SOURCE" PURCHASING

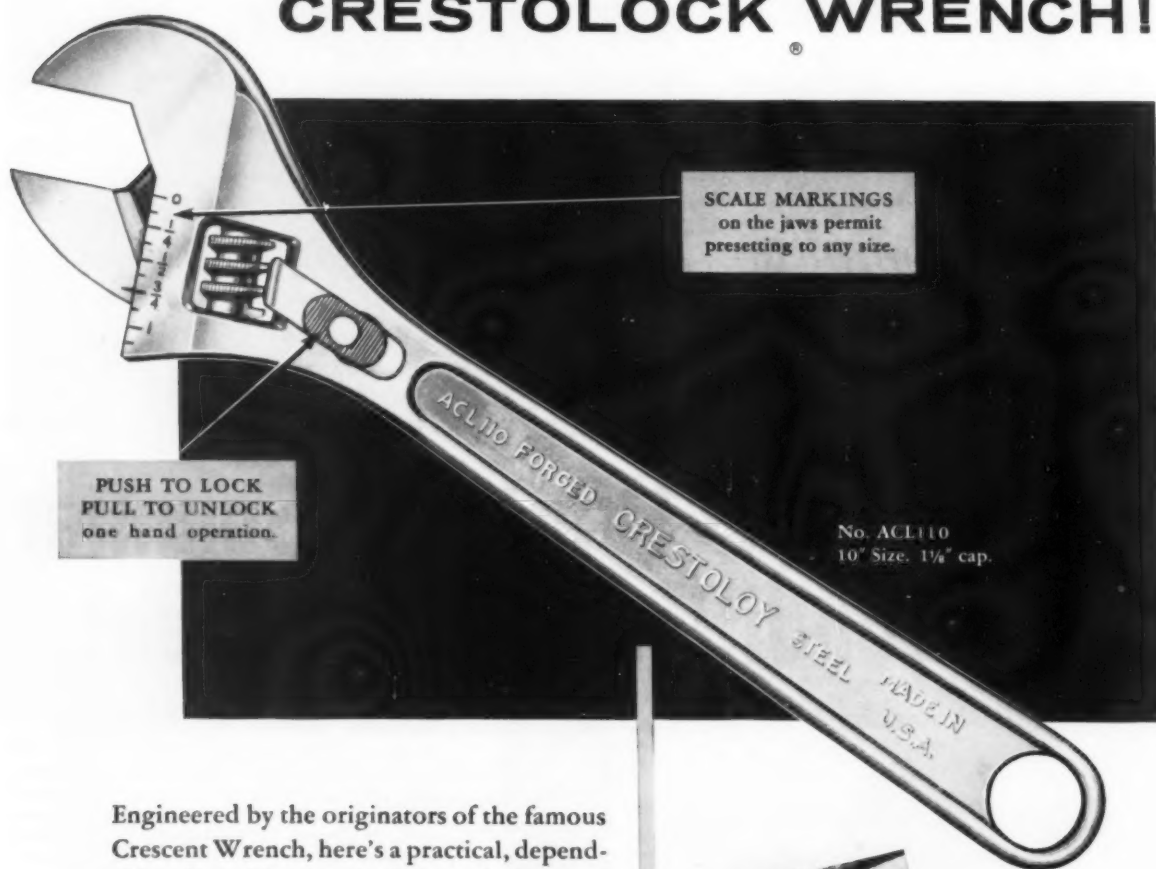
Majestic furnishes a complete line of heating equipment and accessories—furnace fittings, ducts, registers, and the like—giving the dealer the benefits of single source purchasing. Majestic's potent, hard-selling SALES AIDS (sales, service, and installation material of every type) are specially designed to help you profit. Investigate today the complete story of Majestic's full service and dealer co-operation plans.

The **Majestic** Co., Inc.

394 Erie Street, Huntington, Indiana

WRITE TODAY for PROFIT-MAKING Details—

No other locking adjustable like this new CRESTOLOCK WRENCH!



PUSH TO LOCK
PULL TO UNLOCK
one hand operation.

SCALE MARKINGS
on the jaws permit
presetting to any size.

No. ACL110
10" Size, 1 1/4" cap.

Engineered by the originators of the famous Crescent Wrench, here's a practical, dependable adjustable wrench *that can be locked at any infinite opening size within its capacity.* Basically, it's the time-proven Crestoloy Wrench PLUS a simple, positive locking device.

There is no working strain on the lock . . . no projections . . . it is operated by the thumb of the same hand that holds the wrench. If the lock should be damaged, the wrench is still operative as a standard Crestoloy. Available in 8, 10 and 12 inch sizes, chrome plated with stainless steel locking device.



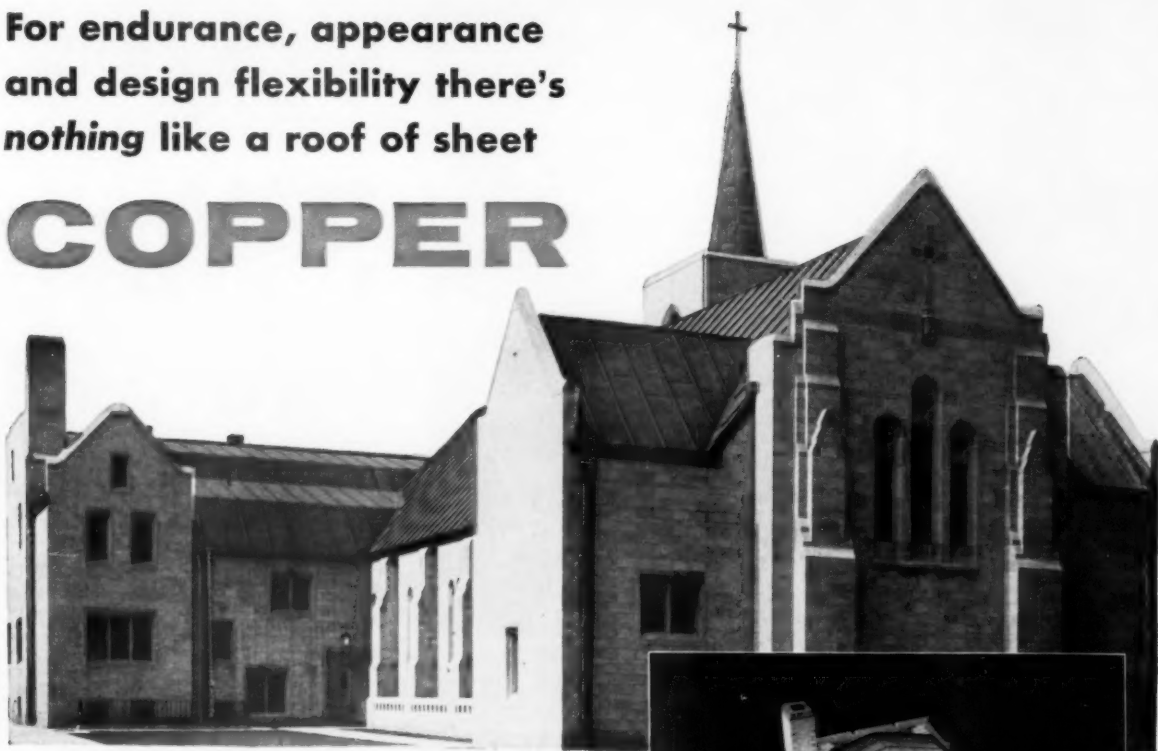
GET YOUR COPY
Forty pages, profusely illustrated. Tells how to do it easier and better with 30 different hand tools. Tips on care and maintenance. Send a dime or get a copy FREE with the purchase of any Crescent Tool.



Crescent is our trade-mark, registered in the United States and abroad, for wrenches and other tools. Sold by leading distributors and retailers everywhere and made only by
CRESCENT TOOL COMPANY, JAMESTOWN, NEW YORK

For endurance, appearance
and design flexibility there's
nothing like a roof of sheet

COPPER



**31,000 lbs. of 20 oz. Cold Rolled
Revere Sheet Copper were used to roof
FIRST CONGREGATIONAL CHURCH, Alpena, Michigan**

Traditional, modern, you name the design . . . no matter what you call it, copper is at home with all of them. An excellent example of the versatility of copper is shown by the combination of the batten and flat seams in photos shown at right.

This most versatile of metals is also the most enduring. And because of its workability into any shape or form and the ease with which it is soldered, copper is the preference of architects, engineers and contractors alike.

Since 1806, when Paul Revere rolled sheet copper to roof the Old North Church, Boston, Revere Sheet Copper has been serving the nation.

As a result of this more than century and a half of experience Revere's Technical Advisory Service is qualified to aid you in the solution of problems you may be having in connection with the application of Revere Copper, whether it be for roofs, gutters, flashing, leaders, spires, fleches or other ornamentalations.

And remember, too, all Revere Sheet and Strip Copper is marked with the correct gauge and temper in water-soluble ink for easier, more accurate identification by architects and sheet metal men. Another reason why you should specify, use, Revere Copper.

And if you do not have a copy of Revere's 110-Page Book, "Copper and Common Sense" you'll find it a worth-while addition to your files. Free copy on request.

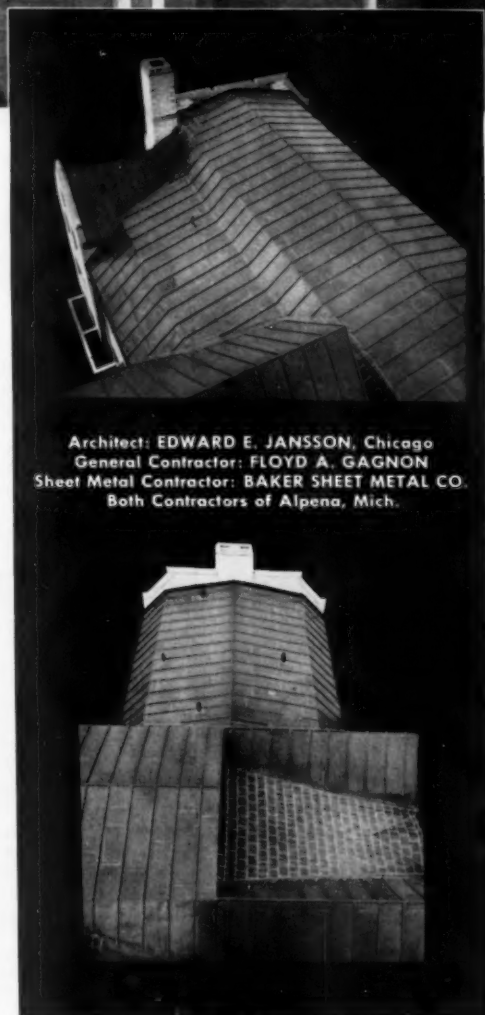
SEE OUR CATALOG IN SWEET'S FILE.

REVERE COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

230 Park Avenue
New York 17, N. Y.

Mills: Rome, N. Y.; Baltimore, Md.; Chicago, Clinton and Joliet, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Brooklyn, N. Y.; Newport, Ark.; Ft. Calhoun, Neb. Sales Offices in Principal Cities, Distributors Everywhere.



Architect: EDWARD E. JANSSON, Chicago
General Contractor: FLOYD A. GAGNON
Sheet Metal Contractor: BAKER SHEET METAL CO.
Both Contractors of Alpena, Mich.



**G-E BLOWER MOTORS
PROVIDE . . .**

3 Ways

**to cut your
installation
and service time**

1. QUICK INSTALLATION



QUICK-CONNECT TERMINALS offer a more rapid wiring method, yet do not interfere with conventional studs.



SPEED NUT welded inside shell of G-E fhp motor permits fast outside connection of conduit fitting.

2. BETTER PERFORMANCE



SUPERIOR MYLAR® INSULATION (right) has 35 times the moisture resistance of ordinary paper insulation, resists effects of heat and age.



DOUBLE LUBRICATION LIFE provided by 50% more oil, and efficient oil retention system cuts maintenance to a minimum.

3. LOCAL SERVICE



PROMPT REPAIR SERVICE through General Electric's network of Small Motor Service Stations is as near as your telephone.



REPLACEMENT MOTORS are also available locally. G-E Form G replacement motors provide top-quality, long-life performance.

*Reg. trade-mark of DuPont Co.

FOR MORE INFORMATION ON G-E FHP MOTORS, WRITE SECTION 702-51, GENERAL ELECTRIC COMPANY, SCHENECTADY, N. Y.

GENERAL  ELECTRIC



Heat, Cool—or Both! The Residential TRANE Climate Changer combines heating and cooling in a compact, easy-to-install package. Cooling unit (top section) fits TRANE and other modern warm air furnaces. 2, 3 and 5-ton sizes. Install with furnace, or add it later. Heating unit (lower section) is gas fired; sizes from 77,000 to 154,000 Btu. Trim, modern lines.

Now! “Big system” comfort for the home—with compact Trane Climate Changer units!

Install a quality heating-cooling job in any home, store or office with packaged units engineered by Trane!

New TRANE Residential Climate Changer units are now available to heat and cool any home, store or office. Versatile equipment from TRANE makes it easy to install *quality* air conditioning—with big system comfort and performance—with compact units designed by a leader in the industry. And these units are produced in the newest, most modern factory—with new tooling, latest manufacturing methods.

TRANE Climate Changer equipment is versatile; there are TRANE Warm Air Furnaces—designed from the beginning to go with cooling. Adding bonnet or duct cooling units makes them year-around Climate Changers! And there are fan-coil type cooling units to go with TRANE Baseboard or other types of wet heat.

When you sell and install TRANE Climate Changers, you can depend upon superior engineering, easy installation, peak performance. Your local TRANE Office will gladly help you with any problem. And powerful TRANE advertising—national and local—will help you sell!

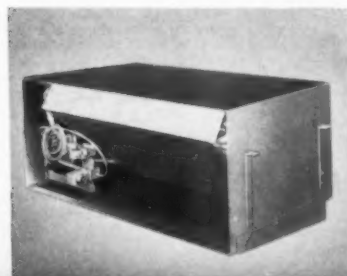
Want More Facts? Call your nearby TRANE Sales Office for complete information on new TRANE Climate Changers. Or write TRANE, La Crosse, Wisconsin.

For any air condition, turn to

TRANE

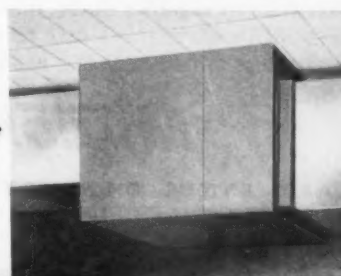
MANUFACTURING ENGINEERS OF AIR CONDITIONING, HEATING, VENTILATING AND HEAT TRANSFER EQUIPMENT

THE TRANE COMPANY, LA CROSSE, WIS. • SCRANTON MFG. DIV., SCRANTON, PA. • CLARKSVILLE MFG. DIV., CLARKSVILLE, TENN. • TRANE COMPANY OF CANADA, LIMITED, TORONTO • 97 U.S. AND 19 CANADIAN OFFICES



◀ **Low Ceilings?** Install this TRANE duct-type Climate Changer. Same engineering, same capacity as bonnet type unit shown above.

▶ **Cool With Any Heating System!** The TRANE Fan Cooling unit has its own quiet, centrifugal fan, distributes cooled, filtered, dehumidified air to every room. Can be located in attic or basement; takes only 5 sq. ft.! *Needs no water!* Air-cooled condenser for TRANE Climate Changers is located outside the home or building.





**Erect more squares per day—
do less welding—make more money
with Milcor Bonderized Deck**

Here's steel roof deck designed with the contractor in mind. It's 24 inches wide—there's less welding to do. It comes as long as 28 feet 6 inches — covers faster. Die-set ends fit together easily, quickly. Ribs $\frac{3}{4}$ inch wide enable a man to weld from the top, eliminating the need for

costly fillet welding alongside each sheet as it is laid.

That's not all. Milcor's *Bonderized*, baked-enamel prime finish resists on-the-job damage — puts an end to many paint complaints.

Get all the facts. Write for catalog 240.

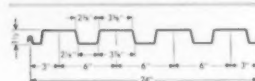
MILCOR Steel Roof Deck

INLAND STEEL PRODUCTS COMPANY Member of the **INLAND Steel Family**
DEPT. 1, 4023 WEST BURNHAM STREET • MILWAUKEE 1, WISCONSIN

ATLANTA • BALTIMORE • BUFFALO • CHICAGO • CINCINNATI • CLEVELAND • DALLAS • DENVER • DETROIT
KANSAS CITY • LOS ANGELES • MILWAUKEE • MINNEAPOLIS • NEW ORLEANS • NEW YORK • ST. LOUIS.



"A" Section — The standard of the industry for closed-rib decks.



"B" Section — Wide rib distributes metal for greater structural efficiency — gives higher section properties per pound of steel.



"C" Section — Carries normal roof loads over spans up to 20 feet.

WHAT'S HAPPENING . . . including Washington Letter

June Housing Starts Up 15% Over Last Year

WASHINGTON, D. C. — Nonfarm housing starts rose more than seasonally to 115,000 in June, with gains in both private and public housing, according to Secretary of Labor James P. Mitchell. He said that according to preliminary estimates of the U. S. Labor Department's Bureau of Labor Statistics, the June figure was 15 percent above a year earlier and was the highest total for any month since August 1955.

This year's expansion from May to June took place in all sections of the country except the Middle Atlantic and West North Central states, Mr. Mitchell said.

F. W. Dodge Corp. reports that construction contracts in the U. S. in June totaled more than \$3.8 billion, by far the highest figure ever reported for any single month. The June contracts were 12 percent above the previous high record which had been established only a month earlier, in May, and they were 18 percent higher than in June of last year. Contracts for residential buildings in June were valued at \$1,364,231,000, a gain of 20 percent over a year ago.

OHI Sets Up Course in Oil Heating at William and Mary's Technical Institute

NEW YORK CITY — A course in oil heat will be instituted this fall at the College of William and Mary's Technical Institute, in Norfolk, Va., according to the Oil Heat Institute of America, which has been cooperating and assisting with the organization of the course and in planning the curriculum.

The course will run for a full year. There will be two semesters of 22 weeks each. The fall semester will be a basic course in oil burner service and installation and will be elementary in nature since it is planned for persons with no previous experience in the oil heat field. The spring

NWAHACA Holds First 'Silver Shield' Clinic; 11 Local Groups Attend Meeting



REPRESENTING FOUR CITIES interested in NWAHACA'S Silver Shield program are (l to r) Frank W. Heckler, Pittsburgh; Elden L. Hauck, Springfield, O.; N. J. Biddle, Detroit; and Carl B. Williams, Akron. These representatives of local dealer-contractors attended the first Silver Shield clinic, held in Cleveland

CLEVELAND — Representatives of 11 local groups attended the National Warm Air Heating and Air Conditioning Association's first "Silver Shield" clinic to learn how to set up a "Silver Shield" program similar to the Kalamazoo program inaugurated

July 25. The day-long session covered a) purpose of a local bureau; b) how to organize a local bureau; c) operating the Silver Shield program; d) financing the program; e) the kick-off meeting.

Two members of the Kalamazoo Indoor Comfort Bureau, Glen W. Rynbrand and Harold H. Guernsey, explained how the Kalamazoo group was formed, told about some of the problems encountered and described the measures taken to solve them. Suggested methods of overcoming problems which may be anticipated are described in an organization manual which will soon be made available by NWAHACA.

The clinic, which will be condensed for local presentation, presented graphically through the use of slide films many of the problems encountered by the dealer-contractor selling to the building contractor. These films point out the general attitude of purchasers toward heating systems and show how through the Silver Shield program a buyer's desire for a quality system can be developed into ac-

(Continued on page 30)

MONCRIEF

HAS AN

Extra Profit

\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$

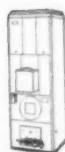
for YOU!



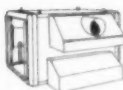
Gas or Oil
Fired Winter
A. C. Units



Horizontal
Furnaces
4 Gas Sizes
4 Oil Sizes



Gas or Oil
Fired Utility
and Counter-
flow Winter
A. C. Units



Gas Duct
Furnaces
4 Sizes



Gas or Oil
Fired Gravity
Furnaces



Gas
Conversion
Burners



3 or 5 H.P.
Water Cooled
Summer
A. C. Units



Gas Fired
Unit Heaters



2, 3 or 5 H.P. Air Cooled
Summer A. C. Units with
choice of "Circular"
(Upflow) or "Flat"
(Horizontal Flow)
Cooling Coils



2, 3 or 5 H.P.
Air or Water
Cooled, Gas
or Oil Fired,
Year 'Round
A. C. Units

If you are spending more for furnaces and air conditioners than for Moncrief, it's time to reexamine the equipment portion of your costs. For there are no better constructed units available than Moncrief!

If you are seeking installation ease resulting from advancements in design, Moncrief is years ahead!

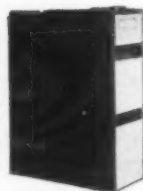
If you want to eliminate call-backs, Moncrief's reputation for service-free operation is unmatched!

If you are paying a premium for a famous name, Moncrief is backed by more than 60 years of engineering superiority and customer satisfaction!

Furthermore, if you have been carrying a large stock in order to get a better price, talk to your Moncrief Wholesaler. His service, plus the low Moncrief price, makes a costly inventory unnecessary!

You can improve your profit position with Moncrief, if you will call your Moncrief Wholesaler, now!

ASSEMBLED AND WIRED . . . GAS . . . OIL FURNACES . . . UNEXCELLED FOR PREMIUM CONSTRUCTION



Winter Air
Conditioner
with enameled
Return Air
Cabinet (an
accessory).



Gas Counterflow
Unit, showing
complete Factory
Assembly

These completely assembled and wired Winter Air Conditioning Units and Counterflow Units have the heavy construction that typifies Moncrief Furnaces. They combine efficiency and compactness with attractive styling — and are approved for high air deliveries for cooling.

Gas Fired: 75,000, 100,000, 125,000 and 150,000 Btu Input.

Oil Fired: 78,400 and 112,000 Btu at Bonnet.



Winter Air
Conditioner
with Plenum
Type Cooling
Coil



Oil Winter Air
Conditioner.
Burner and
Refractory
Firebox are
factory-installed.

THE HENRY FURNACE COMPANY

★ Medina, Ohio

HEATING AND AIR CONDITIONING UNITS

MONCRIEF

FURNACE PIPE AND FITTINGS

NEW

... today's first
adjustable—FOR—HEATING
adjustable—FOR—COOLING

PERIMETER DIFFUSERS



designed by

TITUS

Today's MOST ADVANCED DIFFUSERS . . . AT A TRULY COMPETITIVE PRICE. Obsolete ALL others in APPEARANCE . . . DESIGN . . . PERFORMANCE!

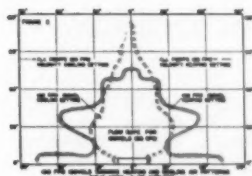
Because they are FULLY ADJUSTABLE . . . the new Titus MODEL P-125 diffusers are today's only baseboard diffusers that can provide the proper throw and spread for obtaining maximum performance from BOTH HEATING AND COOLING SYSTEMS.

Years ahead in looks, too! New distinctive swept-line styling blends beautifully with any surroundings.

New ECONOMY MODEL P-75 has same, superb styling and basic ADVANCED design as Model P-125 except does not have dual adjustment feature. CAN GIVE YOU THE CONTRACT AGAINST ALL KINDS OF PRICE CUT BIDDING BECAUSE THEY ARE BETTER LOOKING, ARE CONSTRUCTED BETTER, ABSOLUTELY OUTPERFORM COMPETITION.

Both of these new Titus models have a large 32 sq. in. of free area. Both are quicker, easier to install. Provide lasting satisfaction—GIVE THAT EXTRA IN HEATING & COOLING COMFORT THAT MAKES AND KEEPS CUSTOMERS HAPPY.

PROOF!



Isovels from laboratory tests prove Titus new adjustable perimeter diffusers **FAR SUPERIOR** in PERFORMANCE! Dotted red line shows how cool air is forced to ceiling when Model P-125 diffuser is set for COOLING. Solid red line shows that when diffuser is set for HEATING warm air is diffused in broad pattern so it covers entire window or wall area.

WRITE FOR FREE CATALOG

TITUS MFG. CORP., WATERLOO, IOWA

- ☐ Rush new free illustrated Titus Perimeter Diffuser Catalog
☐ Send name of jobber nearest me

NAME _____

COMPANY _____

ADDRESS _____

CITY _____

STATE _____



ROLL COPPER^{IN} CARTONS

HANDIEST WAY TO BUY AND STORE
16 OZ. ROOFING COPPER!



Now you can get bright, clean 16-oz. Chase roll copper in the most convenient package ever offered! All standard widths from 6 inches to 20 inches are individually packaged in strong, compact, *practical* containers that are a cinch to handle and store. You can get the new containers of 16-oz. roll copper in 500-pound crates or on 2000-pound skids.

And, of course, the roll copper is standard Chase top-quality! Perfectly uniform in temper and gauge. Bright, clean, with a smooth, even surface.

*Call the Chase warehouse
near you for fast delivery.*

Chase 

BRASS & COPPER CO.
WATERBURY 20, CONN.
Subsidiary of
Kennecott Copper Corporation



LOOK AT THESE ADVANTAGES!

- **SAFE, EASY HANDLING**—recessed ends protect fingers. Cylindrical shape can be rolled easily.
- **EASILY STORED**—Container is extremely compact.
- **SIMPLIFIES INVENTORY**—All the information you need is printed in B-I-G lettering.
- **PROTECTS CONTENTS FROM DAMAGE**—Edges of coil kept free from dents. Surface of coil remains unmarred. Coils **STAY ROUND!** Copper stays dry, clean and bright.
- **NO ACCIDENTAL UNWINDING.**
- **CHASE'S TRADEMARK MEANS TOP-QUALITY.**

The Nation's Headquarters for Brass, Copper & Stainless Steel

Atlanta	Cincinnati	Grand Rapids	Milwaukee	New Orleans	St. Louis
Baltimore	Cleveland	Houston	Minneapolis	Philadelphia	San Francisco
Boston	Dallas	Indianapolis	Newark	Pittsburgh	Seattle
Charlotte	Denver	Kansas City, Mo.	New York	Providence	Waterbury
Chicago	Detroit	Los Angeles	(Massachusetts, L.I.)	Rochester	

For the MOST COMPETITIVE Complete Line

Luxaire is Top Rated!

EXCELLENCE—PLUS COMPETITIVE PRICE—MEANS INCREASED PROFIT!

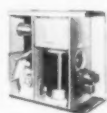
Compare Luxaire Furnaces and Air Conditioning Units with other makes offering comparable qualities.

In every size and model — Gas, Oil or Coal Furnaces; Basement, Hiboy, Counterflow, Horizontal or Gravity Unit; Air or Water Cooled Air Conditioner; Complete Combination Year 'Round Air Conditioner; Gas Unit Heater; Gas Conversion or Oil Conversion Burner — Luxaire is consistently competitive in price!

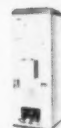
Every Luxaire Unit is priced to give you a real profit advantage — plus advanced design, heavy construction, easy installation and trouble-free performance!

With Luxaire, you do not have to choose between a low price and excellence — for Luxaire gives you both!

See your Luxaire jobber, today!



Basement Type Winter Air Conditioning Units. Burn either Gas or Oil.



Counterflow Units and Utility Units. Burn either Gas or Oil.

HEATING... COOLING... AIR CONDITIONING!



Gravity Furnaces. Burn either Gas or Oil.



Horizontal Furnaces. 4 Oil Burning Sizes. 4 Gas Burning Sizes.



Gas Duct Furnaces. 4 Sizes.



Gas Unit Heaters. 5 Sizes.



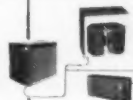
Gas Conversion Burners.



Combination Year 'Round Air Conditioning Units. 2, 3 or 5 H.P. Air or Water Cooled. Burn either Gas or Oil.



Water Cooled Add-On Summer Air Conditioning Units. 3 and 5 Tons.



Air Cooled Add-On Summer Air Conditioning Units. 2, 3 and 5 H.P. Compressor-Condenser Assemblies available with Duct or Plenum Type Cooling Coils.



Winter Air Conditioner with Optional Accessory Return Air Cabinet installed.



Oil Winter Air Conditioner has Factory-Installed Refractory Firebox.



Winter Air Conditioner with Plenum-Type Cooling Coil.

Factory Assembled and Wired! Gas Furnaces and Oil Furnaces!

Heavy, Compact, Modern! With High-Static Approval for Add-On Air Conditioning! Set in place and connect to the fuel line, electrical supply and ducts! Gas Fired — 75,000, 100,000, 125,000 and 150,000 Btu input — Upflow and Counterflow! Oil Fired — 78,400 Btu output, Upflow and Counterflow — 112,000 Btu, Upflow!

THE C. A. OLSEN MANUFACTURING COMPANY • ELYRIA, OHIO
Luxaire HEATING & AIR CONDITIONING UNITS

Wholesalers Announce Program Plans For Annual International Convention



HOSTS AT NHAW'S 12th ANNUAL CONVENTION will be (seated, l to r) John Petrie, Hyman Blaushield, Mrs. Blanche Kanner, James F. Klein, John F. Reichert, III. Standing (l to r) Julius Kramer, C. J. Stewart, James Crombie, Jack Green, Bill Smith, C. E. Caddy, Phineas Kadish, Henry Kornsand, H. Ross Sharp, Jim Martin, Wib Bull

CLEVELAND — The National Heating & Airconditioning Wholesalers will meet at the Statler Hotel, Cleveland, Dec. 1-3, for their 12th annual international convention. Following is a program of events now scheduled:

December 1

9:00 a.m. Committee meetings

12:00 noon Luncheon meeting

2:15 p.m. Panel workshop session on 13 policy problems of wholesalers. These include: 1) Should wholesalers take on major lines of equipment handled by a competitor who is covering the same territory? 2) Pricing and bidding. 3) What obligation do wholesalers have to manufacturers? 4) Should dealers have exclusive territories?

December 2

9:15 a.m. General membership meeting featuring reports of committee chairmen and of the nominating committee. Election of trustees and officers will take place at this meeting.

11:30 a.m. Business conference program

6:30 p.m. Social hour and annual banquet

December 3

9:30 a.m. Workshop panel ses-

sion on "Cost of Services in the Heating and Air Conditioning Wholesale Industry." This panel will cover: 1) pricing service; 2) return merchandise; 3) cost of selling in broken cartons; 4) minimum orders; 5) collect calls and yellow page advertising; 6) trucking; 7) insurance and inventory costs.

12:00 noon Luncheon meeting

2:30 p.m. New trustees' meeting

Public Still Wants Better Housing, New Equipment

NEW YORK CITY — "The American public is maintaining its insistence on constantly rising standards of housing and home equipment, even in periods of widespread recession talk," according to Harold Massey, managing director of the Gas Appliance Manufacturers Association.

He noted that shipments of year 'round residential gas air conditioning units have nearly tripled during the first half of 1958, and that there is a strong demand for add-on cooling equipment. "Even erstwhile cold water flats are getting automatic heating of high quality," he said.

Air Conditioning Exposition Expands

NEW YORK CITY — More than 400 manufacturers have engaged space at the 14th International Heating & Air-Conditioning Exposition, which is to be held January 26-29 at Convention Hall, Philadelphia. The display has already become larger than that last held in Philadelphia in 1955, according to the American Society of Heating and Air-Conditioning Engineers, sponsor of the show. The society's 64th annual meeting will be held concurrently.

11 Cities Represented At Silver Shield Clinic

(Continued from page 25)

ceptance and a willingness to pay the higher price required to install such a system.

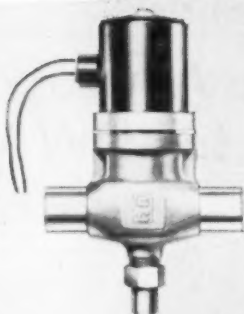
The strength of the Silver Shield program is based upon the written guarantee, a copy of which is provided the purchaser of the heating system, that assures quality heating throughout the heating season. The Silver Shield program also includes a guarantee for central residential summer air conditioning and for year 'round air conditioning. The conditions of the guarantee are spelled out on a contract form available from NWAHACA.

The clinic outlined methods that can be used by interested dealer-contractors to start Silver Shield programs in their communities. It also provided sample cases demonstrating how to finance advertising and inspection costs and outlining the assistance NWAHACA will provide through personal guidance and instruction manuals.

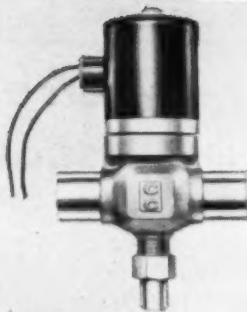
Cities represented at the first clinic were Akron, O.; Birmingham, Ala.; Charlotte, N. C.; Cincinnati, O.; Detroit, Mich.; South Bend, Ind.; Pittsburgh, Pa.; Springfield, O.; Monongahela, Pa.; Waukegan, Ill.; Monroe, Mich.

(More news on page 32)

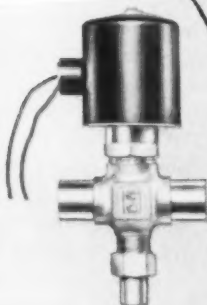
Model 274
— Orifice 1";
Connections 1 1/4" N.P.T.;
1 1/8" and 1 3/8" O.D.F.,
1 3/8" and 1 5/8" O.D.M.



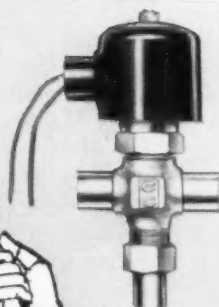
Model 273
— Orifice 3/4";
Connections 1" N.P.T.,
1 1/8" O.D.F. and
1 3/8" O.D.M.



Model 272
— Orifice 1/2";
Connections 3/4" N.P.T.,
7/8" O.D.F. and
1 1/8" O.D.M.



Model 271
— Orifice 1/2";
Connections 3/8" and
1/2" N.P.T., 3/8" O.D.F.,
7/8" O.D.M.



Step right up for a closer look!

4 New Solenoid Valves by

**Now you can choose from a complete line
of dependable models to satisfy any
solenoid application in the refrigeration field**

Available in a full range of orifice and connection sizes with capacities up to 60 tons, these versatile solenoid valves are designed for both liquid and suction line refrigerant (for Refrigerants 500, 40, 12 and 22) plus hot gas defrost installations and for controlling water-flow.

Cast bronze construction... moisture proof coil... easy inspection of internal parts after installation. Pilot operation gives increased capacity. Valves are over-powered to lift against rated maximum operating pressure differential at 85% of rated voltage. Available with pipe thread connections or you can solder these compact valves into lines quickly and easily, even in difficult positions. Manufactured in accordance with Underwriters' Laboratory Specifications.

These new solenoid valves complement the largest and most complete lines of expansion valves, water regulating valves, pressure regulating valves, filters and driers supplied by any one manufacturer in the industry.



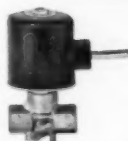
CONTROLS COMPANY of AMERICA

Manufacturers of A-P CONTROLS

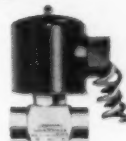
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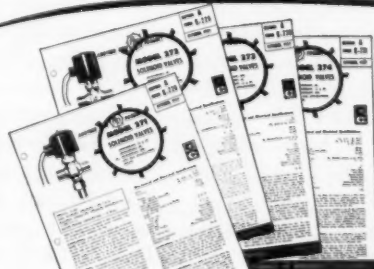
Plus these standard industry favorites



MODEL 73 — Use with refrigerants, air, water and oil. Available in 3 orifice sizes and 4 body sizes.



MODEL 67 — Available in 2 types. Metal-to-metal seat and soft resilient seat. 3/32" orifice.



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engineering
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*These bulletins
give complete
specs on new
A-P solenoid
valves.*

Utilities Vie For Heating Business

CHICAGO — The Peoples Gas Co. has made application for permission to extend gas heating to 25,000 additional single family homes in Chicago, according to a recent issue of the Chicago Tribune. In the same issue was an announcement of a campaign to promote electrically heated homes and apartments in the Chicago area by Commonwealth Edison Co. in conjunction with a new low rate for residential customers who install permanent electric space heating equipment. The new rate fixes a charge of $1\frac{3}{4}$ cents a kilowatt hour for all electricity used over 500 kilowatt hours a month. Willis Gale, chairman of Commonwealth Edison, said that electric home heating has begun to take hold in the Chicago area and predicted that about 500 houses and apartments in the company's service area will use this type of heating next winter.

Marketing Advisory Council Proposed for NWAHACA

CLEVELAND — Members of the publicity and merchandising committee of the National Warm Air Heating and Air Conditioning Association have reviewed their scope of activity in the industry and have proposed to the board of trustees of NWAHACA that the functions of the committee be changed to include the assembling and dissemination of marketing data. The committee, known as the marketing advisory council, would be divided into five individual committees.

The marketing advisory council's responsibility would include all association activities relating to the marketing of indoor comfort products from product conception to ultimate evaluation of customer satisfaction.

The council would:

- 1) Determine the warm air heating and air conditioning industry's marketing needs.
- 2) Develop a program of proposed solutions to meet those needs.
- 3) Present the needs and proposed solutions together with proposed budgets.
- 4) Request industry to approve and to promote the solution programs.
- 5) Execute and control the programs through the NWAHACA staff and marketing advisory council within the budget provided.

The council would be divided into these five main committees: trade relations, public relations, market research, dealer training, and codes and standards.

In each of its programs, the marketing advisory council would spell out the purpose of the activity undertaken and explain how it is to be executed — by the association, by manufacturers, wholesalers, dealer-contractors or utilities. These programs would be designed to influence home owners, new home buyers, home builders, commercial builders and members of the industry.

New Research House Features Sandwich Panel Construction

WASHINGTON, D. C. — The National Association of Home Builders is building two research houses — one in South Bend, Ind., and the other at Knoxville, Tenn. — to demonstrate how attractive, low cost homes can be produced through the use of new building materials and equipment or adaptations of known materials.

The South Bend house will be a one story, six room building of sandwich panel construction. The panels, developed by Koppers Co., Pittsburgh, are made with a foamed plastic core between exterior and interior finishes. According to NAHB, this type of panel has never before been used in building a house. Nearly square in shape, the South Bend house will measure 36 ft. 6 in. by 32 ft. 6 in., and will cover 1200 sq ft. Floors will be constructed of a new

lightweight concrete, under which will be the ducts used for distribution of heat. The design of the heating system will provide for addition of air conditioning at any future time. It is expected that it will be possible to reproduce this research house in the South Bend area for about \$13,500. However, the association points out, land values might vary the cost of similar houses built in other areas.

Hardboard is the basic structural material used in the Knoxville research house, which is being built under the co-sponsorship of NAHB and the Masonite Corp. The Knoxville home will be the first in a series of research houses to be built by NAHB and selected manufacturers over the next four or five years to demonstrate the best uses of various basic building materials.

More Mortgage Funds To Be Available For Low Priced Housing

WASHINGTON, D. C. — The Federal National Mortgage Association recently announced that \$150,000,000 more is being made available for commitments to purchase low and moderate priced housing mortgages under its Special Assistance program authorized by the Emergency Housing Act of 1958. Under this program, FNMA issues commitments to purchase FHA-insured and VA-guaranteed mortgages of \$13,500 or less covering housing on which construction had not started at the time the application was made for FNMA's commitment.



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Armco ZINCGRIP
For Highest
Quality
Duct Work

This huge ZINCGRIP duct installation is going into a southern railroad terminal.

Whether you're working on large commercial installations or small residential jobs, you'll find that using Armco ZINCGRIP® Steel will help you provide the top-quality duct work that builds sales.

Excellent appearance and uniformity of Armco ZINCGRIP are the result of more than 20 years' experience in producing this special zinc-coated steel. The coating on ZINCGRIP, applied by a patented continuous hot-dip process, will take as much forming as the base metal without flaking or peeling.

For another thing, you can obtain ZINCGRIP from your nearby Armco Distributor in the **most economical size** for the job at hand. Depending on gage ZINCGRIP is available in coils up to 51" wide; in sheets, up to 51" x 200" or 60" x 180". Most Armco Distributors are prepared to cut the steel to meet your requirements if they don't have the exact size you need in stock.

Try Armco ZINCGRIP for your next job. You can get it from your nearby Armco Distributor. If you don't know his name, just fill in the coupon and mail it to the address below. We'll gladly help you get in touch with him.

ARMCO STEEL CORPORATION, 2648 Curtis St., Middletown, Ohio

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The Herman Miller Building

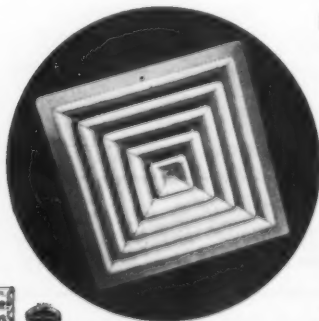
DAYTON'S NEWEST COMMERCIAL BUILDING SELECTS *Lima* DIFFUSERS

PROBLEM:

Proper Comfort Distribution of heating and air conditioning over 130,000 sq. ft. of office space.

ANSWER:

Approximately 1000 Lima Ceiling Diffusers will distribute balanced heating and air conditioning comfort . . . quietly, evenly . . . from the gigantic 490-Ton Air Conditioning System.



Lima Ceiling Diffusers have **extra strength** . . . no hum, no whistle in high velocity air streams! Step-down design, air-foil fins and dampers that open away from center to assure least resistance — provide **extra performability**. For **extra beauty**, Lima's harmonizing finish is applied electrostatically for evenness . . . then baked on for lasting beauty.

For every heating installation . . . residential, industrial or commercial . . . from ceiling to floor . . . Lima's **standardized** line of Diffusers, Registers and Grilles answer every need . . .

BETTER . . . at no extra cost!

* The Herman Miller Building, 333 W. 1st St., Dayton, Ohio. Owners and Builders: Albert L. Miller, Norman Miller, Zimmel Miller. Mechanical Engineer: Charles Dondican, Dayton, Ohio. Heating, Air Conditioning Wholesaler: M. J. Gibbons Supply Co. Duct Work: Schrieber Sheet Metal & Roofing Co.

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the rim...

easiest
to set...

easiest
to read



PENN "RIMSET"

handles 12 different
heating and cooling jobs

APPLICATION	FAN SELECTOR SWITCH	SYSTEM SELECTOR SWITCH
HEATING ONLY	—	—
	—	AUTO-OFF
COOLING ONLY	—	—
	—	AUTO-OFF
	AUTO-ON	AUTO-OFF
COOLING—with system interlock for separate heating thermostat	AUTO-ON	—
	—	HEAT-OFF-COOL
	AUTO-ON	HEAT-OFF-COOL
COMBINATION Heating-Cooling	—	HEAT-COOL
	AUTO-ON	HEAT-COOL
	—	HEAT-OFF-COOL
	AUTO-ON	HEAT-OFF-COOL

Here's versatility that reduces your control inventory! All you need is *one thermostat unit* . . . the Penn "RIMSET" . . . then stock various sub-bases. Look at the chart . . . all variations for 12 different heating-cooling functions are in the sub-base, the thermostat unit fits them all.

Here's simplicity that saves installation time! Leveling is not essential for accurate operation. All wiring is on sub-base where large terminals are accessible. Thermostat is simply plugged into sub-base.

And, unlike other thermostats, the "RIMSET" does not chatter to cause undesirable "on-off" operation when vibration occurs. On your next job, use the Penn "RIMSET" . . . the thermostat that keeps customers sold on you!

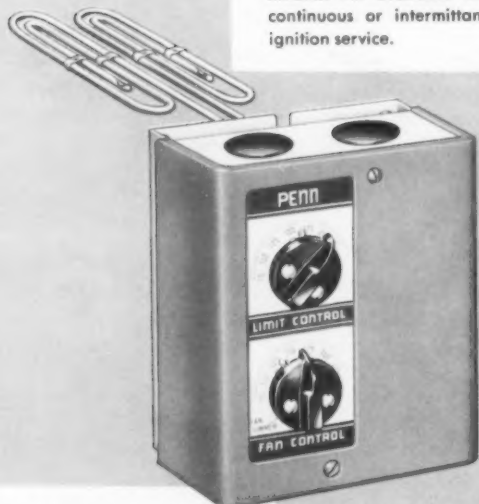
AND, THERE'S MORE FOR YOU

A PROFITABLE POINT TO REMEMBER...

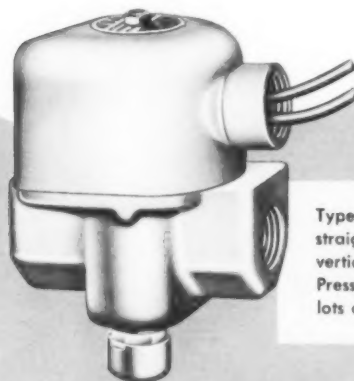
PENN CONTROLS DELIVER THE HEATING COMFORT YOU SELL!



Oil burner stack switches either in single or two unit models. All available for continuous or intermittent ignition service.



Type 520 liquid expansion combination fan and limit control with calibrated dials for warm air furnaces.



Type 926 gas valve with straight-through flow and vertical self-cleaning seat. Pressure regulators and pilots available.



Type 442 safety limit or operating immersion control with "trigger-quick" response for hot water jobs.

PENN CONTROLS, INC. Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N.Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES



This is the book!

the **KEY** book for reaching the **KEY** factors in
RESIDENTIAL AIR CONDITIONING
WARM AIR HEATING
SHEET METAL CONTRACTING

75 to 80% of the total business in Residential Air Conditioning, Warm Air Heating, and Sheet Metal Contracting is done by 20 to 25% of the dealers. These are the **KEY** dealer-contractors — and American Artisan has them as **PAID** subscribers. Want the facts? Write us.

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Need special sizes? Modern equipment cuts them to

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New Heating *Standards* Card

Puts Comfort Story Across



FOURTEEN MONTHS AGO (July 1957) Standards for Rating Heating Systems were published by American Artisan for the first time in a convenient form for use as a sales tool. Since then, over 60,000 of the cards have been ordered and used to aid dealer-contractors in selling heating systems which include all components needed to provide well-balanced air distribution to all parts of a house. As is the case with all new ideas the Standards for Rating Heating Systems have improved with usage.

Many dealer-contractors have written us offering suggestions on how to alter the standards card to make it even more valuable. These suggestions have been carefully weighed and checked. The result—a new standards card, slanted even more toward selling the prospect quality over price.

The new card has been designed to provide prospects with selling information about the essential ingredients of a well-designed heating system. This information can be used effectively by the dealer-contractor and his salesmen to show a prospect how to purchase a heating system that will provide comfort in every room of the house.

Dealer-contractors who have used the standards card report that it serves a two-fold purpose: 1) It helps the public select a dealer-contractor who is capable of installing quality systems; 2) It provides quality-conscious dealer-contractors with a tool that justifies a price which includes a fair profit for his skill.

Turn to the improved Standards for Rating Heating Systems card on the following pages



A Familiar Sales Tool Has a New Look

How to Use This Card

AMERICAN ARTISAN, the Magazine of Central Residential Air Conditioning, Warm Air Heating and Sheet Metal Contracting, presents here a set of standards based on proposals by industry authorities.

The quality of a warm air heating system can vary widely, depending on a number of details. To assist the prospective purchaser in selecting a good installation, 12 important points are listed with comparative conditions that classify system performance and reflect the comfort level to be expected.

Use these 12 points and the equipment list which appears on the back of this card to select the warm air heating system for your home.

Standards for Rating Heating Systems

POINTS TO CONSIDER	GOOD SYSTEM	FAIR SYSTEM	POOR SYSTEM
Room air temperature variations	Less than 2 degrees shown by thermometer on a table in middle of room	Between 2 and 4 degrees (shown by thermometer on a table in middle of room)	Over 4 degrees (shown by thermometer on a table in middle of room)
Temperature variation between rooms	Less than 2 degrees between coolest and warmest rooms	Between 2 and 4 degrees between coolest and warmest rooms	Over 4 degrees between coolest and warmest rooms
Variation in temperature between floor and 30 inch level	Less than 0.6 degrees for each 10 degree difference between indoor and outdoor temperature	Between 0.6 and 0.9 degrees for each 10 degree difference between indoor and outdoor temperature	Over 0.9 degrees for each 10 degree difference between indoor and outdoor temperature
Variation in temperature between floor and ceiling	Less than 1.0 degree for each 10 degree difference between indoor and outdoor temperature	Between 1.0 and 1.5 degrees for each 10 degree difference between indoor and outdoor temperature	Over 1.5 degrees for each 10 degree difference between indoor and outdoor temperature
Floor surface temperature	Between 65 and 70 F including corners and outside edges during average outdoor weather	Between 60 and 65 F including corners and outside edges during average outdoor weather	Colder than 60 F including corners and outside edges during average outdoor weather

FRONT OF CARD contains introduction, instructions and expanded "sell" copy

HERE'S THE improved, more versatile *standards* card — a time-tested sales tool, embellished with improvements suggested by users, to make future quality sales easier to close.

Based on sales experiences by users of over 60,000 copies of the original card, these changes have been made — largely in the "sell" copy on each side of the card and in

the "blower operation" category — to help dealer-contractors convince the public they are exercising good judgment in selecting their heating systems.

POINTS TO CONSIDER	GOOD SYSTEM	FAIR SYSTEM	POOR SYSTEM
Drafts	No noticeable drafts in any occupied area	Discomfort from drafts at specific spots in an occupied area	Discomfort throughout occupied area
Ventilation	No stale odor in house	Stale odor in house	Objectionable odors in house, lack of sufficient combustion air
Blower operation	Adjusted for continuous operation when outdoor air is 40 F or lower	Continuous only when outdoor temperature is 35 F or under	Continuous only when outdoor temperature is 18 F or under
Furnace capacity	Reserve capacity of 10% at design conditions	Reserve capacity of less than 10% at design conditions	No reserve capacity at design conditions
Fuel burning efficiency	At least 72%	At least 67%	Less than 67%
Flue gas venting	0.02 inches water gage or greater available draft	Between 0.02 and 0.015 inches water gage available draft	Less than 0.015 inches water gage available draft
Noise	Equipment is quiet	Equipment noise is noticeable	Equipment noise is objectionable
<p>Quality heating systems have, in addition to the 12 performance characteristics listed under the GOOD classification on this card, the following components:</p> <div> <div>Air filters Humidifier Flexible duct connections</div> <div>Ducts, registers, grilles, and diffusers designed for summer air conditioning</div> <div>Thermostat in a central location Dampers in all supply and return branch ducts</div> </div>			

WHEN THIS CARD IS USED to evaluate the performance of a proposed warm air heating system, it should be remembered that conditions set forth in the standards are based on tests conducted after nightfall and when outdoor temperatures were not more than 30 degrees above the design temperature. (Abnormal room conditions are created when the sun shines on large glass areas, or when wind velocities are abnormal.) However, under certain conditions of house construction, air distribution, local climate, etc., many or all of the requirements outlined in these standards can of course be exceeded

REVERSE SIDE continues presentation, lists components needed for quality system, explains procedures used



Dealer-Contractors Use *Standards* To Justify Fair Price for Quality

. . . and disqualify prospects' cost objections with logical explanation of why comfort is worth more. These case histories typify results of proper use of the *standards* card to close difficult sales



RUNDOWN OF STANDARDS backed by volumes of sales literature on products helps dealer-contractor sell prospects on quality heating systems

THE STANDARDS CARD is designed primarily to help the salesman point out during his presentation to prospects the various types of heating systems that the prospect may purchase without being aware of the basic variations among them—variations which,

however, could spell the difference between satisfaction and ill-will. The card classifies the performance of three types of warm air heating systems as "Good," "Fair" and "Poor" in terms of 12 basic factors.

The whole approach during the sales presentation should be directed toward pointing out to prospects that the system the salesman's firm proposes for them will meet the requirements outlined under the "Good" heating system classification. This approach conditions the prospect to the fact that he must expect to pay more for the installation because it not only requires more skill to make the installation but also involves additional and higher quality components to provide the proper air distribution needed to meet design conditions.

Here's how the *standards* card was used by Ed Godlewski, Rockford Sheet Metal Works, Rockford, Ill., for example, to aid a prospect in selecting the type of heating system needed for his home, to the best interest of both the purchaser and the dealer-contractor.

The prospect had entered the company's showroom, asked several questions about the equipment and the company's methods of installing heating systems, and then requested a price for making an installation in his home.

Mr. Godlewski explained that any quotation made on the basis of such a brief discussion of the prospect's heating needs would be inaccurate. The prospect advised Mr. Godlewski that he had already talked to three other dealer-contractors and planned to visit a fifth after leaving the Rockford Sheet Metal Works showroom. Asked upon what basis he expected to decide which firm would get the job, the prospect replied that he would consider: 1) the companies' reputations, 2) the products they handle and 3) the prices quoted.

Nullify Reasons for Shopping

The first of these three criteria was discounted when Mr. Godlewski suggested that in selecting five dealer-contractors to interview, the prospect

HERE ARE SOME of the men whose suggestions, based on experience as users, are incorporated in the new standards card:

Glen W. Rynbrand, Glen W. Rynbrand Co., Kalamazoo, Mich.

J. E. Holman, Holman Heating Co., North Cape May, N.J.

Dennis Connors, Connors Heating Service, Ottawa, Ill.

H. VanderWoude, VanderWoude's, Muskegon, Mich.

Norm MacIntyre, AutoMatic Air Heating, Inc., Washington, N.J.

J. B. Miller, Bryant Heating and Air Conditioning Co., Omaha, Nebr.



ARRESTING STORE FRONT invites passersby into shop to discuss heating problems. Prominent display and offer of free *standards* cards in window will arouse home owners' curiosity

had already basically chosen the firms with which he cared to do business; therefore, the reputation of each of the five companies would have to be considered as being about equal.

Mr. Godlewski nullified the prospect's second point of consideration by advising him that each firm would certainly have some special product feature to promote, and after having visited five dealer-contractors he would no doubt have five distinct "advantages" to weigh against each other—without sufficient technical background to analyze each feature objectively—and eventually would be forced to drop this point as a criterion.

To disqualify the third point—that of price—as a means of selecting a dealer-contractor, Mr. Godlewski brought out the heating *standards* card, saying, "Here are the 12 points that you must consider in selecting the proper type of system to be installed in your home. The dealer-contractor you select must be willing to put in a system that will provide the conditions you desire. I would design a system for your home that would meet the requirements listed in the 'Good' column on the card. To do this it will be necessary to add more duct runs and openings than would be required for a 'Fair' system. Therefore my price would be higher than that quoted by someone whose installation would fail to measure up to the requirements spelled out under

the 'Good' heading. And you can bet that a cheaper system would fall short of any or all of the qualifications listed in this column."

Prospect Is Impressed

The prospect was so pleased with this "yardstick" that he asked to take it home to show to his wife before

"I have found the standards cards very effective in a number of ways, and would not be without them again. Potential customers are able to understand warm air systems better and are more susceptible to our suggestions for better installations." — J. E. Holman, Holman Heating Co., North Cape May, N.J.

making a decision. Mr. Godlewski had a better idea. "Let's both go to your home and talk with your wife," he said. "I can explain some of the terminology used on the *standards* card and at the same time, get a better picture of your particular heating problem." The prospect agreed with the logic of the suggestion. Mr. Godlewski explained the differences in the various types of heating systems to both in their home, and made the sale at a price of \$210 more than the highest price quoted by the other

three dealer-contractors the prospect had previously contacted.

This is not an isolated case or unusual use of the *standards* card as a direct sales tool. Neither is another case history reported by Walter Van Slambrouck, Gogolin Heating Co., Toledo, O.

In an answer to an inquiry from a prospect who was interested in a replacement furnace for his home, Mr. Van Slambrouck looked over the outmoded and worn out hand-fired furnace, showed the prospect photographs of new equipment models and outlined the many features of modern automatic heating equipment. He also queried the prospect about the performance of his existing equipment.

Distribution System Inadequate

The home owner and his wife had two major complaints about the existing air distribution system: 1) the living room, which had large areas of glass, was "too cold" for winter occupancy; and 2) the 14-year-old daughter's bedroom, located directly above the furnace in the basement, underwent too great a change in temperatures during each completed cycle of the furnace. Each fall their daughter caught a cold that lasted all winter. They were convinced that in maintaining the selected temperature for the living room during the night, the thermostat was constantly causing on and off cycles of the burner which had an overheating and then chilling effect on her bedroom. When the burner was operating directly under her room, she became uncomfortably warm and threw off her covers. During the off cycle the room cooled and she became chilled as she slept.

Standards Show How

Thoroughly familiar with this common problem, Mr. Van Slambrouck recognized that replacement of the furnace was not sufficient in itself to provide comfort for the family. He proposed, with the aid of the *Standards for Rating Heating Systems* card, not only to provide a heating system that would keep the living room comfortable throughout the win-



IN SELLING ATMOSPHERE of display area, salesmen can demonstrate points enumerated on *standards card* with actual equipment, hand out manufacturers' literature elaborating on sales presentation

Two points testify to the value of standards card in closing the sale:

- 1) In spite of having previously determined the amount they would pay, the prospects did pay the higher price asked for a quality system.
- 2) The prospects never considered calling in a second dealer-contractor for a quotation.

ter but also adjust the existing system to maintain comfort conditions in the daughter's bedroom with almost imperceptible temperature changes.

'Good System' Is Attainable

Mr. Van Slambrouck pointed out on the *standards card* that to meet the requirements of a "Good" heating system, room temperatures should vary less than 2 deg between the coolest and the warmest rooms, and room air temperature variations should be less than 2 deg during a heating cycle. He explained how he proposed to achieve both of these conditions, which were of major concern to the prospects. Discussing the other 10 points on the card, Mr. Van Slambrouck pointed out that many of the benefits of a modern heating system could be achieved for very little additional cost to the prospect because no major revisions were necessary.

Review Quality Story

The *standards card* in this case was used extensively to point out many of the advantages that the prospect could expect from the new system Mr. Van Slambrouck proposed. When the subject turned to cost, Mr. Van Slambrouck passed the *standards card* to the prospect and his wife and suggested that they first look the card

over carefully and ask about any of the points they would like to discuss further. Meanwhile he prepared his estimate from a formula developed by the company and while the prospects were studying the advantages of buying quality, announced his price of \$1075.

Advantages Outweigh Cost

The prosp. t's wife questioned this figure, referring to a friend who recently had a furnace replaced in her

buy the \$1075 system he proposed, but also drew this comment from the prospect's wife after signing the contract: "Well, I may be paying more for my heating system than Mrs. Fraser did, but I'm surely getting a lot better system for it." (This pride of ownership is one of the most important points a salesman can stress.)

Standards Wrap up Sale

Two important points brought out in Mr. Van Slambrouck's case history testify to the value of the *standards card* in making the sale: 1) In spite of having previously determined the amount that they would pay for the heating system, the prospects did pay the higher price asked for a quality system; and 2) the prospects never considered calling in a second dealer-contractor to make a quotation.

The *standards cards* are worded in non-technical language so prospects can easily understand the points being brought out and are specifically designed to show the prospect vividly the differences between a quality system and one that will provide only heat, not comfort.

It's not difficult, with this convincing sales aid, to show prospects they actually save more money over the years by buying quality at a few dollars more than by paying less first cost for an inadequate system.

"These standards give us something definite to talk about . . . I'm certain that all reliable dealer-contractors are installing their equipment as mentioned under the 'Good' system classification."
— Glen W. Rynbrand, Glen W. Rynbrand Co., Kalamazoo, Mich.

home for \$900. She said she and her husband had tentatively agreed they could afford to pay this much, but no more. Again producing the *standards card*, Mr. Slambrouck enumerated the advantages they would be purchasing for the additional \$175. A brief review of the *standards* not only convinced the prospects that they should

Wholesalers Promote Sales With *Standards* Campaigns

Recognizing that everybody benefits from more sales, better profits and improved prestige, many wholesalers set about in different ways to get the *standards* ball rolling among their dealer-contractor customers



REPRINT OF *STANDARDS* SECTION from American Artisan is used by many wholesalers as basis for training programs to help dealer-contractors sell quality heating systems

MANY WHOLESALERS who conduct training programs to help dealer-contractors and their salesmen sell and install better heating systems have found the *Standards for Rating Heating Systems* card ideally suited to this type of sales promotion.

These wholesalers believe that established dealer-contractors who can sell higher quality heating systems at better prices are more likely to buy more equipment from their wholesalers and are in better financial position to pay their bills promptly. Over and above the financial point of view lies a sincere interest in seeing dealer-contractors grow in importance in their communities and earn more profits because of their improved skills in selling and installing good equipment.

Use Reprint in Training

A number of wholesalers have instituted training programs along lines similar to that conducted by Roberts Supply Co., Omaha, Nebr. This wholesaler obtained reprints of the 16 page *standards* section in the July 1957 American Artisan and used the reprint as a text for its dealer-contractor training classes. The 16 page reprint contains six major articles describing the *standards* card and suggesting ways it can be used to upgrade heating sales. Each of Roberts Supply Co. classroom sessions uses

one of these articles as the subject of discussion. Dealer-contractors were encouraged to put the ideas to work and to use the *standards* card in their sales campaigns.

Hold 'Standards Night'

A variation of this idea was used by the G. W. Berkheimer Co., Indianapolis, Ind., which hired a large hall and invited all dealer-contractors in the area to attend a "Standards Evening." Over 100 dealer-contractors attended this meeting which was devoted to discussion and presentation of ideas on how the *standards* could be used to upgrade heating sales.

After the meeting, refreshments were served and individual questions

were answered either in group discussions or in personal conversations.

Another way to get the *standards* story to dealer-contractors was employed by Armstrong Heating Supply Co., Chicago. This wholesaler called a special meeting of its six salesmen to teach them how the *standards* program was designed to operate and how to help their customers put it into actual use. The Armstrong Heating Supply Co. purchased enough of the 16 page reprint and *standards* cards to provide each salesman with an ample supply for his customers.

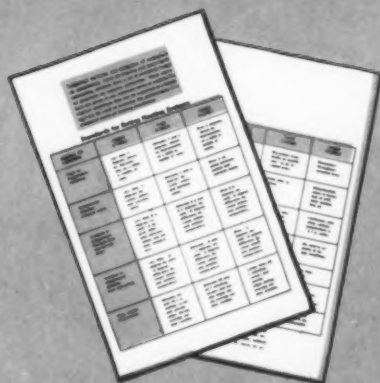
The salesmen had something new to talk about on their calls, something that dealer-contractors immediately recognized as an excellent sales tool for upgrading sales and one that would discourage price shopping.

Mail Cards to Realtors

Other wholesalers have mailed *standards* cards and covering promotion pieces to members of local real estate boards and home builder associations, encouraging them to recommend and promote "Good" heating systems to home prospects as a mark of quality in the homes they sell.

Stimulated by the advice and help they receive from wholesalers, many dealer-contractors have gone all out in *standards* promotion to experience phenomenal improvements in sales.

"We are wholesalers and consider it good business constantly to carry on educational programs with our dealer-contractors. We recently held eight educational meetings and we chose to distribute your *Standards for Rating Heating Systems* at these meetings because it's one of the best pieces of sales literature available today." — J. B. Miller, Bryant Heating and Air Conditioning Co., Omaha, Nebr.



Manufacturers Adopt *Standards* For Local-Level Promotion

To help dealer-contractors sell more heating systems at better prices, many manufacturers have based promotion activities on this powerful sales tool

MOST HEATING-air conditioning equipment manufacturers are constantly turning out local-level sales aids for dealer-contractors who look to them for all or part of their promotion material. These producers make it their business to keep alert to industry trends and developments which will help dealer-contractors build their sales volumes.

Consequently, when American Artisan's *Standards for Rating Heating Systems* was published in July, 1957 several manufacturers set about preparing promotion programs and materials based on this sales tool.

Builds Standards Campaign

One midwestern furnace manufacturer, Century Engineering Corp., built its entire 1958 dealer-contractor promotion program around a "comfort crusade." The manufacturer's salesmen offered a number of professionally prepared sales aids, all slanted toward promotion of the *standards* at the local level. This man-

ufacturer published a booklet containing a step-by-step procedure for launching a "comfort crusade" at the dealer-contractor level. Special tie-ins were offered to firms which use the entire "crusade" kit, designed to promote the manufacturer's name and products as well as the skill of the dealer-contractor and the comfort performance of systems he installs.

The booklet, offered as the initial phase of the promotion campaign, is entitled "A Comfort Crusade Designed to Increase Sales and to Build Your Business Reputation." It points out how American Artisan's *Standards for Rating Heating Systems* card can be used to sell system performance in terms of benefits to the home.

Kit Covers All Phases

The sales promotion kit includes showroom banners, posters for equipment displays, pennants for home show booths and showrooms, handbills, direct mail pieces, publicity releases, newspaper ad mats, radio spot announcements, television fact sheets, and of course quantities of the *standards* card.

The program spells out precisely how dealer-contractors can use this material most effectively.

The manufacturer's representatives are on call at any time to assist dealer-contractors in solving any individual problems they encounter in telling the public that at last an excellent yardstick is available to help them select quality heating systems.

Each participating dealer-contractor receives one complete merchandising kit free. Additional kits are available at nominal cost and advertising costs are shared with the manufacturer.

Pass Along Suggestions

Other manufacturers use the *standards* for individual promotions, providing a reprint of the July 1957 American Artisan *standards* section and quantities of the *standards* card for each dealer-contractor handling their equipment. With each package they offer recommendations on how to use this sales tool. Some manufacturers have prepared or suggested the use of newspaper ads urging readers to contact the dealer-contractors to obtain copies of the *standards* card. Others recommend reproducing the *standards* card in local-level advertising, identifying the dealer-contractor with the quality systems which meet the qualifications described in the "Good System" column.

Manufacturers also report appreciation of the *standards* card for its conversational value. Manufacturers' salesmen find that it gives them something new to talk about to dealer-contractors, something that has authoritative background, because the conditions listed in the *standards* card are based on research conducted by the manufacturers' association — the National Warm Air Heating and Air Conditioning Association.

"Your standards are the first thing I've seen which, if followed, can result in more sales at a greater profit to the dealer-contractor because they depart from the old nut-and-bolt presentation to tell the comfort story." — Norm McIntyre, AutoMatic Air Heating Inc., Washington, N. J.



Standards Emerge From Research Data

... gathered over the years
from thorough tests under many conditions,
consolidated into a proposal by S. Konzo, scrutinized carefully by industry
authorities and tested across the country by dealer-contractors and others

THE TIME TESTED *Standards for Rating Heating Systems* card was developed from the information presented in a series of articles beginning in the February 1955 *American Artisan* which proposed a set of standards to be used in classifying warm air heating systems according to their performance. These articles, which ran 19 months, were prepared by Professor Konzo, mechanical engineering department, University of Illinois, who has been closely associated since 1927 with the research program sponsored by the National Warm Air Heating and Air Conditioning Association. Professor Konzo has written many articles for *American Artisan* over the past 20 years and his extensive knowledge of the warm air heating field has been responsible for many of the advances made by the industry. Probably no member of the industry is better qualified to initiate such a set of standards than Professor Konzo. This series has been reprinted as a booklet

which is available from American Artisan.

The Konzo standards, as proposed in his articles, cover three general areas:

- a) house construction
- b) furnace performance
- c) comfort conditions

"We have made a good deal of use of these forms, and we intend to use them more extensively in the future." — H. VanderWoude, VanderWoude's, Muskegon, Mich.

Regarding the first category Professor Konzo points out, "The heating dealer has comparatively little influence as far as building construction is concerned. He is required to furnish a heating system for the houses which are made available to him. However, a dealer will frequently be consulted by the builder, the home

owner, or the architect about items such as moisture protection, insulation requirements, and others. He will be in a much stronger position if he is able to make suggestions for changes in house construction at the time the plans are being made."

CAC Is Basis of Performance

The heating standards proposed by Professor Konzo include six factors pertaining to furnace performance. These items show how closely the principles of CAC (comfort air circulation) are followed in a given installation. If the blower operates almost continuously in moderately cold weather, if the rate of fuel input to the furnace is not excessively high and if the measured flue gas losses are within stated limits, the plant will be in reasonably good adjustment.

Temperatures Rate Comfort

The proposed standards concerning comfort conditions refer to temperature control which will make a home comfortable in every corner and from floor to ceiling in every room.

As Professor Konzo states, "The work at our research residences has demonstrated time and again that good equipment and good installation practice alone are not enough. The manner in which the burner and blower are adjusted and the controls are set will mean the difference between a poor job and a most acceptable one."

TABLE 1 — TEST SERIES at University of Illinois covered various types of duct systems and numbers of warm air outlets

Test series	Season	Duct system used	No. of warm air outlets	
			1st story	Basement
F 11	1952-53	Individual 4 in. ducts from furnace plenum	8	0
F 13	1952-53	Extended plenum with 4 in. branch ducts	8	0
F 21	1953-54	Individual 4 in. ducts from furnace plenum	6	3
F 24	1953-54	Same as F 21 but with more warm air volume for increasing the temperature of the 1st floor	6	3
A 1	1947-48	Extended plenum with rectangular branch ducts	7 (high side wall)	4 (ceiling)
A 11	1948-49	Same as A1 except branch ducts sealed at plenum takeoff	7 (high side wall)	4 (ceiling)

TABLE 2 — PERFORMANCE OF SIX heating systems tested at the University of Illinois research station rated high on most points when compared with American Artisan's Standards for Rating Heating Systems. Letters identify the classification heading on the standards card: G = Good System, F = Fair System, P = Poor System.

Points to consider	Test series identification number					
	F 11	F 13	F 21	F 24	A 1	A 11
Room air temperature variations	G	G	G	G	G	G
Temperature variation between rooms	G	G	G	G	G	G
Variation in temperature between floor and 30 inch level	G	G	G	G	G	G
Variation in temperature between floor and ceiling	G	G	G	G	P	P
Floor surface temperature	G	G	G	G	G	F
Drafts	This data not evaluated in these tests					
Ventilation	This data not evaluated in these tests					
Blower operation	F	F	F	F	F	F
Furnace capacity	G	G	G	G	G	G
Fuel burning efficiency	This data not evaluated in these tests					
Flue gas venting	This data not evaluated in these tests					
Noise	This data not evaluated in these tests					

In order to show the merits and deficiencies of the various heating systems, Professor Konzo devised an arbitrary scale of A, B, C, and D ratings. The average warm air heating system which produces satisfactory levels of indoor comfort would likely rate a B classification. This is probably the highest rating for which a well installed and properly adjusted system in an average house would normally qualify. The A rating would be earned by those relatively rare installations in which a combination of excellent house construction, extremely good weatherproofing and a properly sized and finely adjusted heating plant would produce the ulti-

mate in indoor comfort and close temperature control at minimum operating cost.

A job that is less satisfactory than one with a B rating, yet produces conditions that can be tolerated without too much discomfort would more than likely be rated in the C classification. Any installation whose performance falls short of that of a class C system would cause considerable discomfort and would fall in the D classification.

Research Systems Rate High

It is interesting to note in comparing data accumulated from a large

variety of tests in research residence No. 2 with different types of heating systems (reported in the University of Illinois' Engineering Experiment Station bulletins No. 401 and 445) that the systems installed compare very favorably with the recommendations in the *Standards for Rating Heating Systems* card. The tests conducted at the University of Illinois were assigned code numbers to identify the various types of systems installed, for which operating data was obtained and evaluated. Bulletin No. 445 discusses the results of tests F-11, F-13, F-21 and F-24, Bulletin 401 reports data from tests A-1 and A-11. None of these tests obtained data relative to drafts within a room, ventilation within the house, fuel burning efficiency, flue gas venting or noise of equipment. Therefore, the data obtained can be checked only against the five classifications on the front of the *standards* card and the Blower Operation and Furnace Capacity classifications on the back of the card. The accompanying table shows how the performance of the various systems compared with the specifications on the *Standards for Rating Heating Systems* card.

It's interesting to note that in almost every case, the data evaluated satisfied the requirements listed in the "Good" classification.

"The standards cards are a welcome addition to the trade. They aid the sales presentation of the dealer-contractor who knows how to make a good installation but who is not a finished salesman."
— Dennis Connors, Connors Heating Service, Ottawa, Ill.

Test No. F-11, conducted during the 1952-53 heating season, analyzed an individual round duct system with eight warm air outlets on the first floor and none in the basement.

... then came the Modernization Guide



Dealer-Contractors Acclaim Modernization Check-Lists



... as one of the industry's most productive sales tools for: 1) locating prospects, 2) holding exclusive leads, 3) building confidence, 4) promoting quality and 5) closing modernization sales

IT'S INTERESTING TO NOTE in interviews with dealer-contractors from every section of the United States, that some of these men have little trouble locating plenty of prospects for their services but have difficulty closing the sales, whereas other dealer-contractors complain of inability to uncover enough leads but show an enviable contact-to-sale ratio. This of course is largely a management problem and can be solved only by the individual firm. American Artisan continually reports case histories of how dealer-contractors are overcoming such difficulties.

American Artisan has insisted for many years that home owners need only to be told of the inadequacies of their heating equipment to become good prospects for better heating systems. A rich sales bonanza awaits dealer-contractors who will make a special effort to locate prospects among owners of outdated and outmoded heating systems. Modernization specialists enjoy more profit than those who offer their skills in the capacity of subcontractors to builders of new homes, or those who provide strictly service and maintenance work for heating and air conditioning systems that have broken down.

Modernization Guide Published

To help dealer-contractors cash in on the rich modernization market, American Artisan published in March 1958 an entire issue devoted to this subject. Among the sales tools developed by American Artisan and

made available to dealer-contractors are three check-lists with which the home owner can determine his heating, summer air conditioning and sheet metal modernization needs. These check-lists are available from American Artisan in any quantity needed (see coupon on page 52). Orders have been received for quantities from 50 to 5000 since they became available.

By use of the check-lists, dealer-contractors are able to develop ex-

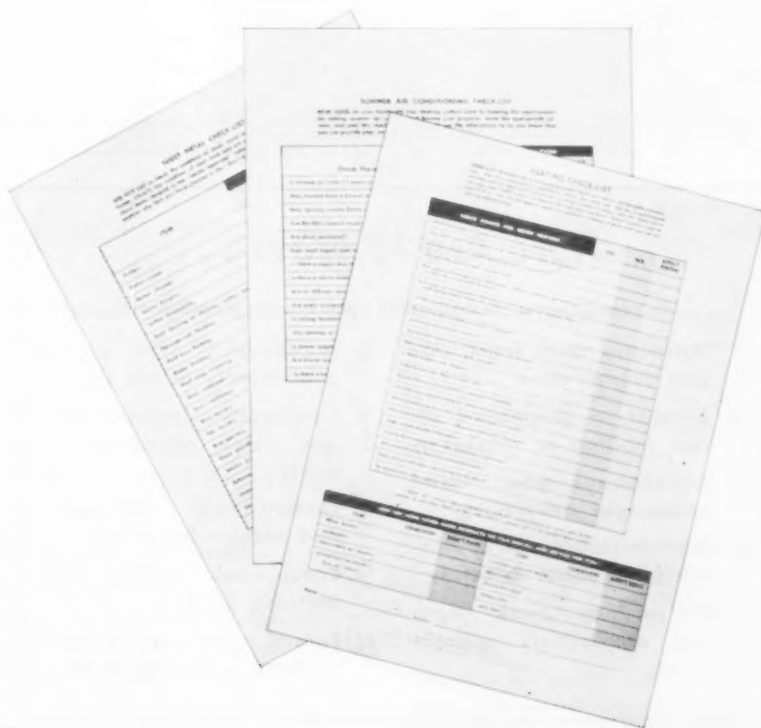
clusive leads which are strengthened by three factors which have come to light in six months' usage by dealer-contractors:

1) Prospects seldom call in others to bid on the job.

2) Prospects have confidence in equipment recommended by the dealer-contractor serving them.

3) Quality becomes more desirable than any other factor involved.

The check-lists notify the home owner of his modernization require-



ments and assure him that the dealer-contractor who sent them is interested in his specific problems.

Check-Lists Are Versatile

The check-lists, developed after extensive field tests, can be used in many ways. Dealer-contractors report using them as handouts at home shows; as direct mail pieces; in telephone solicitations; as handbills for door-to-door delivery; as salesmen's cold canvass sales tools; as illustrations and themes for newspaper ads; as subjects for radio and television advertisements; and as completion charts for service work, to be left with home owners for study after service calls.

The reverse side of each check-list has been left blank to provide space for the dealer-contractor's advertising message or letter. Many firms print a complete letter on the back, instructing the home owner to fill in and return the check-lists for complete information on how the existing system can be altered at minimum cost to provide winter or year 'round comfort, protection and safety. If the check-lists are to be used as handouts, an advertising message can be printed on the back, along with the company name, address and phone number and a list of the services the firm offers. Promotional copy on the face of the check-list explains its purposes and instructs readers to

fill in and return the check-list to the dealer-contractor who gave it to them.

Repeat Mailings Pull Leads

Sales promotion campaigns can be built around the check-lists. Remember that all prospects can't be expected to respond to the first check-list they receive in the mail or at a show or fair. Some firms recommend that in a direct mail program, check-lists should be sent at intervals of four to six weeks. Some dealer-contractors send the same check-list each time; others alternate the mailings, sending the heating check-list first, then the summer air conditioning and sheet metal check-lists at pre-determined intervals. It's always advisable, if the direct mail campaign concentrates on one of the check-lists, to inform prospects that check-lists covering the other subjects are available. Sales messages should also list all services offered by the company. In fact, it's a good idea to suggest in the selling message of each check-list that the information contained in all three check-lists is closely related.

Maintain Constant Promotion

Sales promotion must be considered a continuous business activity if it is to pay off. Ten inexpensive methods of keeping the company informed about the dealer-contractor's avail-



ANALYZING RETURNS from check-list mailing enables salesmen to prepare presentation of modernization proposal to fit each prospect's needs

ability for modernization work are presented in the box on this page.

These ten ways to promote modernization work can be applied to promotion of the check-lists themselves. As suggested in items 1 and 5, a blow-up of one or all the check-lists could be placed in the display room window or on the truck side, inviting prospects to stop in for a free copy. An excellent variation of the uniform decals mentioned in point 5 would be a copy of the check-list itself, or reproduction of it on a business card, which could be left with the service customer or attached to the furnace by the serviceman as a permanent reminder. Enlarged copies of the heating, summer air conditioning or sheet metal check-lists could also be used on job signs, with check marks opposite each point showing that the modernization work underway is being checked at each step to assure the best possible comfort conditions. Copy could explain that the work is being done because the home owner used the check-lists to determine his modernization needs, and discover the advantages of year 'round comfort and economy provided by a modern air conditioning system and the necessary sheet metal work.

The check-lists have been tested by time and use. They are excellent tools for arousing interest, minimizing price shopping, building confidence and selling quality work. They are inexpensive to promote, yet according to dealer-contractor testimonials, rank among the most productive sales tools ever available to the industry.

Here Are 10 Ways . . .

. . . to reach home owners with your modernization message

- 1 Attractive store front, sign and display area
- 2 Blanket or pinpointed direct mailing of check-lists
- 3 Continuous and varied newspaper advertising
- 4 Modernization ads in classified telephone directory
- 5 Eye-catching truck signs and employees' uniform decals
- 6 Inexpensive sign posted prominently at job site
- 7 Cooperative advertising and sales promotion activity
- 8 Limited-range television and radio advertising
- 9 Conspicuous outdoor advertising signs
- 10 Special events and publicity stunts in market area



Wholesalers Map Modernization Campaigns for Local Markets

Here are some helpful ideas being used in dealer-contractor training and assistance programs, based on American Artisan's Modernization Guide and check-list promotion

Modernization story is passed from . . .



wholesaler . . . to dealer . . . to prospect

WHOLESALEERS, IN THE enviable position of close contact with all phases of the industry, develop an awareness of dealer-contractors' problems and needs for market-developing sales aids. Most wholesalers consider the analysis of the various available promotion tools and their applications to local market conditions one of their foremost responsibilities to the dealer-contractor, the manufacturer and themselves.

Many wholesalers who have long considered the modernization market one of the ripest plums in the heating-air conditioning-sheet metal industry,

find American Artisan's 62-page Modernization Guide reprint from the March 1958 Modernization Issue and the heating, air conditioning and sheet metal check-lists from the same issue made to order for developing local-level modernization programs.

Guide Used as Textbook

Wholesalers report excellent results from use of the Modernization Guide as a textbook for dealer-contractor training programs to point out:

1) The market in the local area for modernization work; 2) how a deal-

er-contractor can gear his business for modernization work; 3) how to locate prospects for modernization work; 4) how to sell modernization prospects; 5) how to pay salesmen who specialize in modernization; 6) how to find salesmen for modernization promotion; 7) how to train salesmen; 8) how to put the service department on the modernization selling team; 9) how to bid on modernization work; and 10) how to install modernization jobs. These subjects, all covered in the reprint, make excellent topics for classroom discussion in the sales clinics.

Develops Phone Canvass

The keys to locating prospects for modernization work are the check-lists described in the Modernization Guide. They are designed to promote the dealer-contractor as a modernization specialist and to locate productive leads. They can be used in many ways, some of which have already been described. The Thompson Co., Atlanta wholesaler, uses the check-lists to locate prospects through telephone canvassing, for example.

Demonstration Shows How

Mr. Thompson invites the dealer-contractor and his sales staff into his office for a demonstration by Mr. Thompson's trained assistant of how a telephone presentation should be conducted to maintain prospect interest, at the same time finding out how close a prospect's air distribution system comes to meeting the requirements of a modern installation. After a day of concentrated training in the art of telephone canvassing, the wholesaler turns over all leads to the dealer-

contractor, who continues the telephone canvass from a script prepared by the wholesaler. Results are reported very satisfactory.

Provides Mailing Pieces

Another wholesaler has printed an attractive promotion piece on the backs of a supply of the check-lists which he mails to lists of prospects supplied by dealer-contractors. Several follow-up mailings are made at five-week intervals. The dealer-contractor pays only postage and handling costs.

Spotlight Dealer-Contractor

Others have helped their dealer-contractors plan and conduct modernization advertising programs featuring the check-lists to spotlight the dealer-contractors as the logical choices for modernization work. These wholesalers prepare ads which vary in appearance but emphasize the fact that copies of the three check-lists are available from local dealer-contractors without obligation.

Teaches Sales Presentation

One wholesaler conducts a sales school for his customers' salesmen to show them how to use the check-lists which are filled in and returned by prospects, to close sales. These classes outline a sales presentation which emphasizes to the prospect that modernization work is needed and the cost is minor as compared to the comfort that will be enjoyed after the necessary alterations have been made. This wholesaler also has established an employment bureau through which he helps dealer-contractors find modernization salesmen.

See Value of Training

This policy of dealer-contractor training is becoming more common among wholesalers who recognize the check-lists as the ideal vehicle for helping dealer-contractors cash in on the rich modernization market by showing prospects precisely what their modernization needs are and how they can be met to provide the utmost in comfort and well-being.

To: The Editors
American Artisan
6 N. Michigan Ave.
Chicago 2, Ill.

Please rush the following quantities:

_____ Heating check-lists
_____ Summer air conditioning check-lists
_____ Sheet metal check-lists
_____ Standards for Rating Heating Systems cards

Enclosed is my check for \$. . . to cover reprinting costs.
(Please print)

Name _____

Company _____

Street Address _____

City and State _____

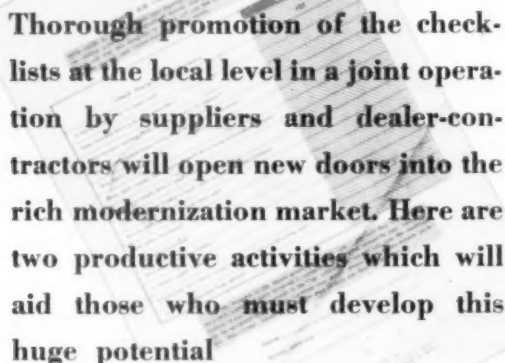
I am a dealer _____ wholesaler _____ manufacturer _____
other _____

THE HEATING, air conditioning and sheet metal check-lists published in the March American Artisan Modernization Issue can be used as direct mail pieces, for presentation by salesmen, as giveaway items for home shows, etc. Designed to remind home owners of their modernization needs, the two-color check-lists are available at the following prices:

Quantity	Cost
50	\$ 0.85
100	1.35
200	2.70
300	4.05
400	5.40
500	6.75
1000	13.50
2000	27.00
3000	37.00
4000	48.00
5000	59.00

Standards cards are two cents each

Check-Lists Made to Order For Manufacturers' Promotions



Thorough promotion of the check-lists at the local level in a joint operation by suppliers and dealer-contractors will open new doors into the rich modernization market. Here are two productive activities which will aid those who must develop this huge potential

NOBODY IS MORE AWARE of the fact that over 10 million single family homes in the United States have air distribution systems which should be remodeled or replaced than the manufacturer of heating and air conditioning equipment. The manufacturer knows, too, that capture of this expanding market is in the hands of the dealer-contractor who sells and installs his heating and air conditioning equipment.

Consequently, manufacturers across the country have expressed interest in American Artisan's Modernization Guide and heating, air conditioning and sheet metal check-lists, designed to help dealer-contractors develop their local modernization markets.

While the type and extent of promotional activity undertaken by manufacturers is usually dictated by company policy, there are two types of promotion which are generally considered productive, and are made to order for modernization promotion. They are: 1) national sales contests, and 2) modernization sales portfolios for dealer-contractors.

Set Quotas for Sales Contest

Manufacturers who elect to conduct national sales contests must first analyze all the local markets served by the dealer-contractors who handle their equipment, in terms of the annual sales potential which can be ex-

pected from each. This estimate would be based on present total dollar volume of each dealer-contractor, weighing carefully such influencing factors as current business environment, trends, etc. Findings from the market studies, compared to information on hand about the dealer-contractors' past sales performances, will enable the manufacturer to estimate the amount of additional sales volume which could be expected from aggressive local level promotion programs closely supervised by the manufacturers' representatives.

Success of the contest, in terms of increased sales volumes, will depend to a large extent on the availability of the proper promotion tools for productive saturation of each local market with the sales message. The manufacturer must prepare and distribute all the sales tools which are commonly used in a promotion campaign, slanted toward the three check-lists and the suggestions for using them in the Modernization Guide and subsequent articles in American Artisan, and suitable for use under varying market conditions.

The first essential would be an enlargement of American Artisan's check-lists, suitably mounted for display in windows, on counters or equipment in the showroom and in prospects' homes during sales calls.

The check-lists are applicable to all standard promotion devices: ad mats,

radio and television scripts, direct mail and other media which have been found productive for local level use. The check-lists should be the focal point of all phases of the promotion to take full advantage of their lead-producing power and to provide a common denominator for the individual campaigns.

Impetus for wholehearted participation by dealer-contractors would come from offers of prizes in different categories for the highest percentages of increase above quotas. Lesser prizes should also be awarded for every dealer-contractor who exceeds his quota.

Produce Complete Sales Kit

The second method of developing local sales activity, preparation of a modernization sales portfolio, does not involve individual market surveys, assignment of quotas and close supervision, but leaves the handling of the local level campaign up to the individual dealer-contractor. The package must be complete, including all the sales aids required to promote the check-lists in local markets. Some dealer-contractors will want to go all the way in promoting modernization; others will limit their promotions to the media which have proved effective in their areas. In either case a complete array of promotion tools must be available.

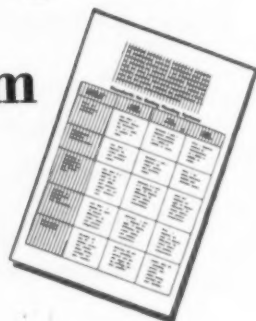
Visual Displays Add Punch

The heating, air conditioning and sheet metal check-lists are ideally suited for presentation in a visual display package or book featuring "before-and-after" illustrations, testimonials, etc. which can be taken into the prospect's living room to emphasize dramatically the differences between old air distribution systems and those which have been modernized, and to illustrate the check-points outlined in the lists.

Constant reference to the check-lists as each step is uncovered in the display portfolio would show the prospect the contribution of each operation toward complete and economical comfort in his home.



Check-Lists Find Prospects, *Standards* Sell 'Em



Here's an unbeatable selling combination — two dynamic sales tools which not only produce leads but also present the quality story so forcefully that price diminishes as a buying objection

MOST OF THE dealer-contractors who have combined the effectiveness of American Artisan's modernization check-lists to locate and develop prospects and the *Standards for Rating Heating Systems* card to upgrade heating sales have revised or extended their sales presentations to take full advantage of the personal appeal of this "one-two" combination. Eventually these presentations develop into approximately the same basic pattern, varying mainly in details which must be altered to fit circumstances.

The presentation actually starts with analysis by the salesman of a check-list which has been completed by a direct mail prospect, service customer or the salesman himself during a visit with a home owner.

Find Primary Interest

Once he has established the adaptability of the prospect's system for modernization, the salesman again reviews the answers to the check-list questions to find points which will be of primary interest to the prospect. These points, of course, will receive particular attention in the sales presentation. An example of the effective use of this personal approach is the case history on page 43 of Walt Van Slambrouck's sale to the prospects who were visibly concerned about the lack of sufficient heat in their living room and severe temperature fluctuations in their daughter's bedroom. Opening his presentation with a discussion of these specific problems, Mr. Van Slambrouck cap-

tured the prospects' attention by evincing interest in their individual problems, and eventually closed the sale because of his ability to solve their comfort problem.

Successful salesmen sell comfort, not equipment parts. They sell the performance of the entire system in terms of personal benefits. They use the check-lists to review the shortcomings of the existing system and explain how it can be modernized at minimum cost to provide the comfort conditions described in the "Good System" column on the *standards* card.

Personal Appeal Is Calculated

The personal appeal of each of these sales tools is not accidental; they were developed primarily to show, in the prospect's language, how each of the conditions listed will benefit him, while the salesman points out how they can be obtained by modifications in his existing system.

Unfortunately, even though the salesman uses the check-lists and *standards* card to dispel any apprehensions about the prospect's comfort, there will always be individual buying objections which must be overcome before the sale can be closed.

Explain Background

Trained salesmen develop a knack for anticipating buying objections by noting the prospects' reactions to each of their points. Usually the objection is rooted in a misunderstanding and

can be cleared up by a review, again using the *standards* card and check-lists as reference. Sometimes, prospects might indicate a suspicion that the *standards* card and check-lists are "gimmicks" to sell a certain brand of merchandise. This objection can be not only cleared up but actually converted to an advantage by explaining that the information therein was developed by a national magazine dedicated to helping dealer-contractors provide their customers with the best possible installations and services, by keeping them informed of latest developments and practices. The prospect should also be informed that the points outlined are based on research at the University of Illinois and other reliable testing institutions.

Avoid Early Price Discussion

Probably the most common objection the salesman must be keyed to meet is that of price. If possible, it's advisable to sidestep the price question until the entire presentation has been made and the individual points enumerated on the sales tools are added up to show that 1) quality far outweighs price as a consideration, and 2) a "Good" system will be worth far more to the prospect over the years than the price he paid for it.

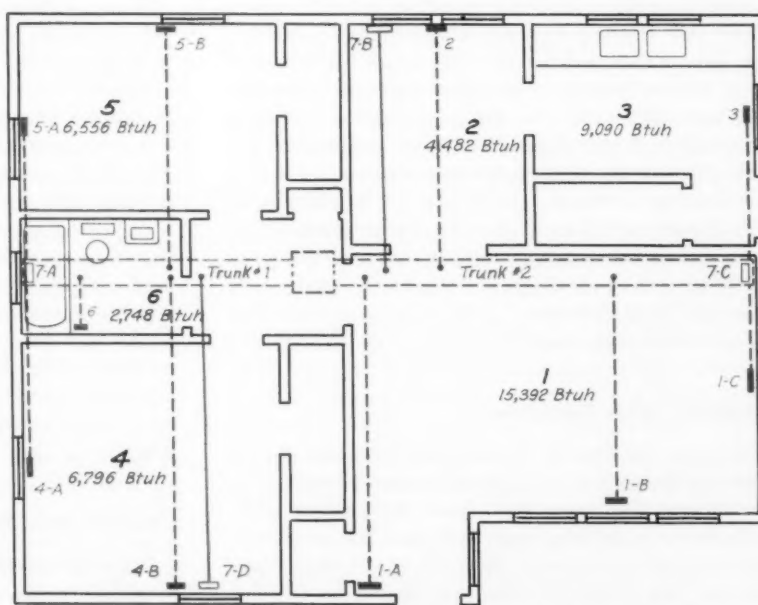
As dealer-contractors develop their sales approaches on the basis of experience with the check-lists and *standards* card, they will find they have at their command probably the most powerful selling combination ever available.



NO STRANGER to American Artisan readers and the heating-cooling field, Guy Voorhees is one of the industry's outstanding authorities. For many years, he has been associated with NWAHACA, assisting in the preparation and presentation of educational programs, technical manuals and government and industry reports. Mr. Voorhees long has been in a position to keep abreast of latest developments, and his reports in this continuing series in American Artisan reflect these up-to-the-minute ideas.

Locate Outlets to Handle Varying Basement Heat Loads

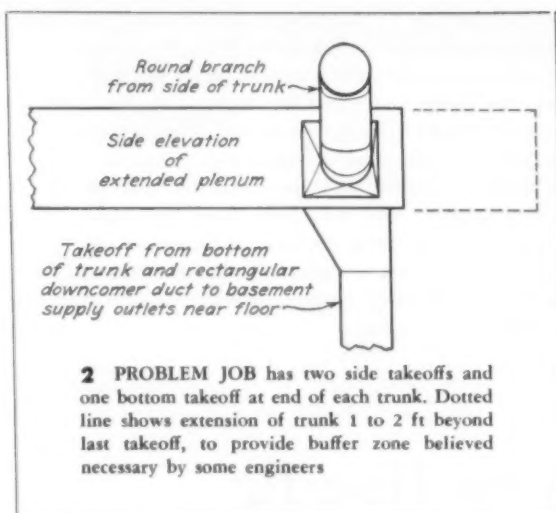
If you can't sell the home owner on zoning, heating the basement will involve some compromises and lots of judgment to compensate for seasonal and structural effects on heat losses. Here are some pointers on sizing and positioning of air distribution components to do the best job possible under changing conditions



1 BASEMENT SUPPLY DUCTS (solid lines) take off from extended plenum to perimeter outlet locations. Branches 7-A and 7-C are downcomer ducts from bottom of extended plenum; 7-B and 7-D have top takeoffs, run between joists and connect to downcomers. Extended plenums and branches to first floor are dotted lines

LOCATION OF WARM AIR OUTLETS in basements is governed by several conditions. If the basement is not heated for occupancy, the principal purpose of basement outlets is to warm the floors of the rooms above, the importance of which was considered in a previous "classroom" article. For this purpose in the basement of a small house, a single register or diffuser may be set in the side of the

plenum to discharge the heated air so it gradually spreads along the basement ceiling. One objection to such an arrangement is that the floors of the rooms immediately above the one outlet may become uncomfortably warm. The solution is to have several outlets spaced some distance apart for more uniform distribution of warm air along the basement ceiling.



We have assumed in this series of articles that the entire basement is to be heated for occupancy, in which case outlets at or near the basement floor line are considered better than high wall or ceiling outlets. National Warm Air Heating and Air Conditioning Association tests have shown that the air temperature difference between floor and ceiling is somewhat less with low outlets than with high outlets. So far as comfort is concerned this might not be too important if the air temperature difference is small in the occupied zone within about 6 ft of the floor. But in a basement with only a 7 ft ceiling as we have in our problem house there's liable to be discomfort and a consequent complaint from the customer if there's too great a floor-to-ceiling air temperature difference. Therefore we shall assume in our present problem that low warm air outlets should be used.

Consider Future Partitions

The next question is: Where shall we locate them? Following the general principle of perimeter heating, we should place them along the outside walls. Often, when the basement is one large undivided space, the owner may plan to install partitions to divide it into several rooms later on. This should be taken into account in locating basement outlets so they won't have to be relocated if partitions are installed. For our present problem we assume the basement is and will continue to be one large, undivided room.

Wall Length Determines Number of Outlets

To heat such a one-room basement, the most common practices reported in training sessions by dealer-contractors, engineers and salesmen are:

1) For a small house which is either square or, if oblong, the length is not more than about 1.3 times the width, one outlet is installed along each of the four exposed walls.

2) For a larger and more narrow house where the length is about twice the width, six outlets, one at each end and two along each of the longer sides, are specified.

3) For a very long, narrow house, one outlet is used for approximately each 20 running ft of perimeter.

Temper Rules With Judgment

These or any other "rules" must be used with judgment. For example, if a house is located on sloping ground so the foundation extends less than 1 ft above grade at one end of the building and 4 or 5 ft at the other end, certainly none of these simplified rules would apply. In any such case, even if the basement to be heated consists of just one large room, common sense tells us that we should perhaps divide it into two or more imaginary rooms. We would figure the heat loss of each one separately, then plan our distribution system to deliver a quantity of heat which at least approximates the calculated heat loss for each section.

One Outlet Per Wall

Since the small problem house which we have been considering is only about 28 × 36 ft, let's plan to install four basement outlets, one along each exposed wall. Branches 7-A and 7-C are downcomer ducts connecting to the bottom of the extended plenum (Fig. 2). Branches 7-B and 7-D each have top takeoffs from the extended plenum. The round branch ducts run between joists and connect to rectangular downcomer ducts (Fig. 3).

According to the simplified design method for small houses as recommended in NWAHACA Manual 4, the heating capacity of a given size duct depends on its actual length and number of elbows because: *a*) the length of the duct determines the temperature of the warm air delivered at the outlet; and *b*) the number of elbows is one factor determining the volume of air delivered (the more elbows in the run, the greater the resistance to air flow).

Consider Size, Resistances

Other factors which determine the volume of air delivered for a given plenum pressure are the size of the branch duct, the resistance of the takeoff from the plenum and the resistance of the diffuser and boot. We can ignore these factors when we use Manual 4 because they were taken into account in preparing the tables. All we need concern ourselves with in sizing branches from an extended plenum trunk are: 1) type of plenum takeoff (top or side), 2) actual length of duct and 3) number of elbows.

Assure Ample Capacity

Branches 7-A and 7-C (Fig. 2) take off from the bottom of the extended plenum trunk but the type of takeoff fitting used is the same as a standard side takeoff. The ac-

tual length of the downcomer duct is a little more than 5 ft. Since the Manual 4 capacity tables list duct lengths in increments of 5 ft, some designers would assume a duct length of 5 ft for runs 7-A and 7-C because the actual length of each of these branches is closer to 5 ft than to 10 ft. But for duct sizing purposes most heating men go to the next greater length. On that basis, we would assign a length of 10 ft to branches 7-A and 7-C for finding their Btuh capacities. So for these two branches we have: a) side takeoff, b) 10 ft branch length and c) no elbows. From this data we find the required branch size as soon as we have considered those structural details of branches 7-B and 7-D which determine their heat delivering capacities.

Transitions Add Resistance

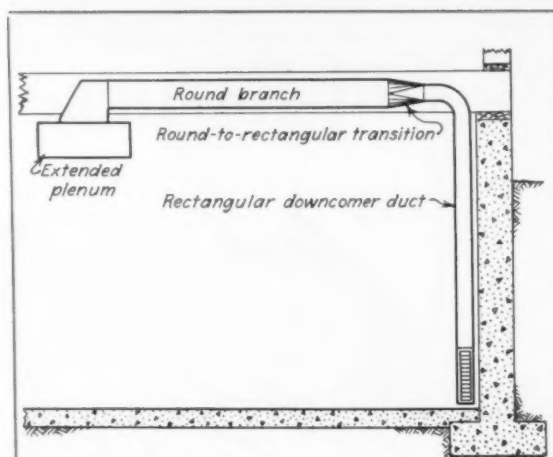
Branches 7-B and 7-D have top takeoffs from the extended plenum trunk. Assume each is a round duct running between the joists with a transition connection from round to rectangular and a rectangular elbow turning down into the downcomer duct as shown in Fig. 3. There is one actual elbow in the branch. But what about the transition? There's a certain amount of turbulence in the air stream where the shape of the duct changes from round to rectangular but there's no general agreement among experienced heating men as to just how much this added resistance amounts to. Some believe that such a transition fitting does not add enough resistance to justify taking it into account in sizing the duct. Others insist it should be counted as an additional elbow. (NWAHACA Manual 9 assumes that the resistance of such a transition is the same as that of 5 running ft of straight duct. This is about the same as the resistance of an elbow in 4 in. duct and according to Manual 4, it is somewhat less than the resistance of a 5 in. or 6 in. elbow.)

Find Total Capacities of Branches

The downcomer section of each of these branches is about 7 ft and the horizontal lengths are about 12 ft for branch 7-B and 15 ft for branch 7-D so the total lengths are 19 ft for 7-B and 22 ft for 7-D. Since the capacity tables list the actual duct lengths in 5 ft increments, we'll take 20 ft as the length of 7-B and 25 ft as the length of 7-D. The capacities of 5-in. branches for the basement are as follows, according to the current edition of Manual 4:

Branch no.	7-A	7-B	7-C	7-D
Takeoff	Side	Top	Side	Top
Length, ft	10	20	10	25
Elbows	0	2	0	2
Btuh (5 in. branch)	8100	4590	8100	4160

The combined capacities amount to 24,950 Btuh. Since this is within one percent of the calculated basement heat loss of 25,104 Btuh, these four 5 in. branches will be specified for the basement.



3 ROUND BRANCH DUCTS 7-B and 7-D take off from top of extended plenum, run between joists and connect to rectangular downcomer duct. Each has one elbow and transition fitting

Place Takeoffs at End of Trunk?

In class sessions two questions are always asked about the effect of installing a job with two or three takeoffs from or very near the end of an extended plenum such as we have at the end of each trunk in our problem (Fig. 2). The first question is: Is there any objection to placing two or more takeoffs close together? This problem was investigated thoroughly as part of the extensive research program sponsored by NWAHACA and the result was published in University of Illinois Engineering Experiment Station Bulletin No. 415. The report showed that, with the precise methods and accurate testing equipment used by research engineers, there was a reduction in air flow when two or more takeoffs were placed close together. But their conclusion was that the difference is too small to take into account in practical extended plenum duct system design.

Extend Trunk Beyond Last Takeoff?

The second question is: Shouldn't an extended plenum trunk extend at least a foot beyond the most remote takeoff to provide a "cushioning effect" to insure full air delivery through the most remote branch? (See Fig. 2). Although some installers hold quite strongly to this belief, the majority seem to agree that it makes little or no difference one way or the other. In many residential installations, extending the trunk beyond the most remote takeoff isn't practical. Any slight effect on air delivery can be easily taken care of by damper readjustment.

Next month's "classroom" article will continue the discussion of heating the basement, dealing with sizing the branches and compensating for early spring heat losses from the basement.

Old Furnace Roundup Corrals



COMPARISON BETWEEN old and new methods of heating is demonstrated with the aid of the family stove of 40 years ago and a 1958 model winter air conditioner

Month-long contest to find the oldest furnace in the area produced a wealth of good will as well as several direct sales and countless prospects for future replacement and remodeling work



ENTRIES WERE IDENTIFIED before initial call by (l to r) Glenn Storrs, Byron K. Hodgson and Virgil L. Buck. Data was attached to each entry from company records

IT'S ALWAYS DIFFICULT to contact a modernization prospect just at the time he is in a mood to buy a new heating system. One way to motivate a prospect to contact you is to develop a sales promotion program that invites public participation and encourages prospects to act. The Co-operative Fuel & Supply Co. of Battle Creek, Mich., which comprises a marketing area population of about 100,000, used an "Old Furnace Roundup" to develop modernization leads during the spring when new installation work is at a low ebb.

Contest Offers Challenge

"The advantage of the Old Furnace Roundup approach is its challenge to people who enjoy entering contests," says Byron K. Hodgson, vice-president of the firm. "Contests hold a fascination for many people; some cannot resist the urge to send in an entry even if they have little chance

Modernization Leads

Salesmen ride herd on replacement and remodeling prospects

of winning a prize. This was evident in one entry from a home owner whose heating system was installed in 1951."

The contest produced 70 qualified entries from March 6 to April 3, 1958, and 10 new heating systems were sold during the contest and in the following 30 days. Other good leads developed during the roundup are currently being followed up. March was selected for the Old Furnace Roundup sales promotion program because home owners are still conscious of the heating system and remember how it performed during the recent winter months. The Old Furnace Roundup was publicized through local newspaper advertising, radio spot announcements and window signs.

Newspaper Ads Herald Contest

An average of two newspaper ads — one large and one small — were run each week, never on the same day. The ads were scheduled on alternating days of the week. The large ad was three columns wide, 11½ in. deep; smaller insertions were one column wide, 7½ in. deep. The contest broke on March 6, with a large ad featuring a cartoon of a cowboy lassoing an old gravity hand-fired furnace. The headline told readers to "Lasso that old monster in the basement." The text of the ad announced the dates of Old Furnace Roundup time when the owner entering the oldest furnace in the Battle Creek area would be awarded a new model furnace free. The ads also promised that contestants had nothing to buy and incurred no obligation by filling out the accompanying coupon. The approximate retail value of the prize was \$500.

Four days later a smaller reminder ad urged people with old furnaces in the Battle Creek area to "act now and enter your furnace in the Old Furnace Roundup."

Radio Spots Tell How to Enter

Three radio spot announcements were made each day during the middle two weeks of the Old Furnace Roundup. Radio spot announcements were timed either to follow or to precede a news broadcast. The times selected for the radio spot announcements varied during the day, between 7:00 and 9:00 a.m., 11:00 a.m. and 1:00 p.m., and 3:00 and 5:30 p.m. Spot announcements told the same story published in the newspapers regarding the Old



ENTRIES WERE QUALIFIED and recorded for the contest by Josephine E. Rice and Glenn Storrs



CUSTOMER REFERENCE BOOK is kept current by Gladys S. Karin. Book has proved to be an effective sales tool



IDENTIFICATION OF ALL entries required many conferences between salesmen to verify age of each furnace



FOLLOW-UP INSPECTION of modernization job is made by salesmen who check location and operation of all controls



INTRICATE DUCT WORK replaced winner's gravity system. Home owner indicated that space gained in basement would be utilized as recreation room

Furnace Roundup, and explained how listeners could enter their furnaces in the contest.

Program Costs \$700

The cost of the four-week program was \$700. This included the 123,000 Btu furnace awarded. (Approximately 50 percent of the cost was borne by the manufacturer.)

Two salesmen, Virgil L. Buck and Byron K. Hodgson, were kept busy calling on the 70 entries and identifying the equipment entered.

Seven Rules Applied

Entries in the Old Furnace Roundup were governed by the following seven rules:

- 1) Age of the furnace must be verified by actual records or verification established by date of manufacture from industry records. (This fact was not emphasized in advertisements, which requested only "date of installation, if known.")
- 2) An oil or gas furnace is to be awarded absolutely free in exchange for an old furnace within the following limits: Size of the furnace is not to exceed 123,200 Btu output; maximum credit of \$330 will be extended toward purchase of a larger unit.
- 3) Entries must be postmarked not later than 31 days after April 3, 1958 (date of last newspaper advertisement announcing the contest).
- 4) The furnace is to be installed prior to July 1, 1958.
- 5) To be eligible, the furnace must be currently in operation.
- 6) To be eligible, the entry must be within 25 miles of Co-operative Fuel & Supply Co. (Albion and Kalamazoo are excluded.)
- 7) In case of a tie, the tie will be broken by a group of three impartial judges.

Old-Timer Helps in Identification

One of the most difficult problems of the roundup was identifying many of the very old furnaces. Mr. Hodgson was aided by a friend, "Doc" Livingston of Marshall, Mich., a wholesaler who has been in the heating industry since about 1900. Mr. Livingston's wide range of experience with old models made identification of the entries possible. The manufacturer's records were also used extensively to identify the approximate date of an old furnace installation.

Publicity Brings Response

The contest was also responsible for a number of calls from home owners who were interested in having their heating systems modernized, even though they felt their furnaces weren't old enough to consider entering in the contest. (This feeling was not shared by everyone — about 15 percent of the entries were furnaces installed after 1940.)

WINNER'S HOME is typical of type of residence which proved to be the best prospects for modernization work



"Comments from contestants very clearly reflect interest in the Old Furnace Roundup and appreciation for the interest shown in contestants' problems by the two salesmen"

Upon receipt of an entry, the first step was to attempt to identify the furnace through information supplied in the entry. It is interesting to note that about 18 percent of the entries were either letters or postal cards, offering more information than was requested in the coupon. This degree of interest was gratifying, especially considering the fact that contestants had to dig up records made at the time of the original installation. Several contestants who could not be sure of the model or serial number of their furnaces drew sketches of the entire furnaces noting any numbers or symbols that appeared on the furnace. Several contestants submitted patent application numbers to help identify the furnace's age.

Interest Is Intense

Interest in the Old Furnace Roundup is reflected in many of the letters received. One family on vacation wrote: "Having seen your ad in the Battle Creek paper, we are entering our old furnace in your contest. We are vacationing in Florida and expect to be home April 1 or shortly thereafter." The coupon included the date shown on the furnace, which was June, 1928. Another letter indicating participant interest read, "I will be out of the city until June. 1. Will contact you on return if you cannot reach me before I leave this week. I have registered in the Old Furnace Roundup." One entrant wrote this comment at the bottom of the coupon: "Would like someone to fix furnace and put on a new smoke pipe. Please call."

Salesmen soon found that a personal call was necessary for positive identification of an entry. This follow-up visit afforded the salesman an opportunity to answer the home owner's questions about heating and to offer suggestions for modernization of the existing system to improve comfort during the next heating season.

Mrs. Thomas A. Cole, whose 45-year-old furnace won the contest, wrote as follows:

"In response to your inquiry about the oldest furnace in Battle Creek, I submit the following information about a furnace we have which is still serving us satisfactorily after 45 years. "I am enclosing a facsimile of the front panel with all the lettering. I found no serial number, but the letter "N" may be a serial letter. Two of these furnaces — size no. 26 — were purchased and installed in a duplex we were remodeling late in the fall of 1913, and we have used it continuously since."

Mrs. Cole's detailed drawing of the old furnace included the model number, serial number, casting numbers and instructions on the four cast iron doors on the front.

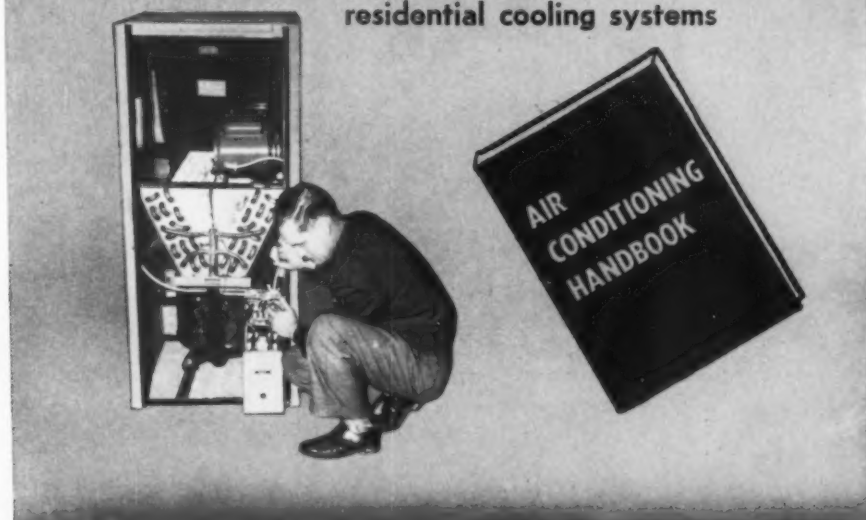
The comments from contestants very clearly reflect interest in the Old Furnace Roundup and appreciation for the interest shown in contestants' problems by the two salesmen.

Follow-Up Calls Bring Leads

Non-winners were notified by Mr. Buck and Mr. Hodgson, who took advantage of the opportunity to promote the company and its products. On each call, the salesman stressed the age of the winner and elaborated on the fact that the winner was the same brand as that currently handled by Co-operative Fuel & Supply Co. Stating that many of the contestants had expressed interest in new developments in warm air heating, the salesman moved into a discussion of such subjects as perimeter heating, electronic air cleaners, etc. High pressure tactics were carefully avoided on these calls, although the salesman offered each contestant a generous trade-in allowance for his existing equipment on the price of a new furnace or year 'round installation.

Practically all entrants expressed appreciation for the personal attention they received from the company, and many assured the salesmen they would call on Co-operative Fuel & Supply Co. for future work.

PRACTICAL APPLICATIONS
for engineering, installing and servicing
residential cooling systems



Weigh Advantages *vs* Limitations In Air Conditioning Row Houses

Here are some of the problems to watch
for in designing summer air conditioning systems for
houses built before cooling became a reality

By S. W. Reid

**Air Conditioning Engineer
Gilbert Associates, Inc.**

WITH RESPECT to modern construction, a wealth of information is available in such simplified form that the design of an acceptable year 'round air conditioning system from scratch is no longer difficult. But when the dealer-contractor is called upon to add summer air conditioning to an old house that is not designed for it, he may have problems. Nevertheless,

chances are the owner of the older home, having most of his family responsibilities and long range financial obligations behind him, is a more likely prospect for summer air conditioning than is a young couple with a growing family in a newer house.

In considering cooling for an old house, one of the first questions asked is, does the house have warm air

heat? If it does, the job of adding summer air conditioning is already started. Actually, as many dealer-contractors know, the existing heating system may create more problems than it solves if the dealer-contractor is forced into too many design compromises. On the one hand he will want to show the owner a saving by adapting the existing system to year

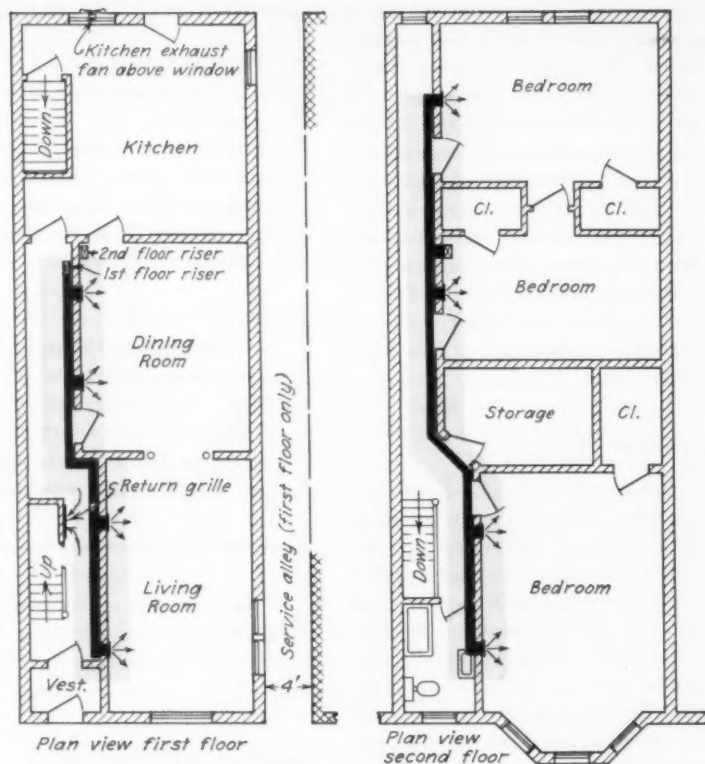
'round duty. On the other hand he will want to try to maintain design standards so that the ultimate result will satisfy the customer. There is no "short form," factory-engineered scheme to solve the problem of air conditioning the older house. Each part of the system must be tailored to satisfy not only minimum engineering requirements, but also existing physical limitations. Let's look into some of the typical problems.

Consider the substantial row house built 50 or more years ago. In some larger cities, particularly in the East, neighborhoods made up of this type house have retained their high respectability and are occupied by people of means who prefer urban life. The type of house we shall consider is large, well-built and in its day probably was occupied by a well-to-do family. It is characterized by the high ceilings in the spacious rooms of its era, some perhaps with fireplaces that were originally the only means of heat. The house now is probably heated by steam radiation which was added several years after the house was built.

Row House Absorbs More Heat

Cooling loads of row houses must be calculated with care, especially by dealer-contractors who have been accustomed to thinking in terms of modern construction. By comparison with a contemporary suburban home, the row house is massive and has a much greater heat-absorbing capacity. This feature levels off the cooling load peaks by causing an extended lag in heat transmission from outside to inside.

Windows in our row house are likely to be large as compared with modern windows. Size, of course, is easily recognized by the load estimator, but does he also recognize the value of an awning in reducing solar heat on the glass? Many old homes have awnings on south or west windows. These may not be in place when the call is made. Large windows in old homes not only have more linear inches of crack than modern windows but they are also likely to allow much more infiltration per inch than



1 TYPICAL ROW HOUSE has long hall and stair well on side — ideal location for branch ducts to registers which can be located high in adjacent side wall because of greater ceiling height in older homes. Return air flows down stair well

modern windows with factory-applied weatherstripping.

In a modern home where every room has at least one exposed wall and a window, differences in the hours of cooling load peaks from room to room are difficult to observe. However, in a row house which has interior rooms or sections of rooms and in which the rooms at one end are virtually isolated from rooms at the other end, there can be a very noticeable difference in the time at which the peak load occurs in the various parts of the house. Unless this fact is specifically noted it might be overlooked by the dealer-contractor who is unaccustomed to making installations in older homes.

Variable Loads Require Zoning

The solution to this variable load problem is zoning. The principle of

zoning is not new, but many dealer-contractors who are inexperienced in modernization work may not be familiar with the procedures involved.

Zoning may be accomplished in several ways. The simplest method, of course, is to use separate systems, making each zone entirely independent. If this method is not practical from the standpoints of cost or equipment selection, automatic zone dampers which vary air flow can be installed. The latter method, however, has some disadvantages if flow is reduced by more than 25 to 30 percent.

The high ceilings in many row houses result in large room volumes and low ratios of cooling Btuh per cu ft. The result is a low rate of air circulation. Here again, the dealer-contractor who is accustomed to working in small, low-volume modern houses (where the problem tends to be too high rather than too low an air cir-

ulation rate) may not be looking for and consequently fail to recognize the factor of insufficient air motion. Velocities in the occupied zone should not be less than 25 to 35 fpm. If they are less than 15 fpm, occupants may experience a sensation of being surrounded by stagnant air. This sensation can be experienced even though the room temperature and humidity conditions are entirely satisfactory, and would be eliminated if the air motion were increased to the proper value.

Circulate More Air

The time to check for a low air circulation rate is in the design stage, not after the system has been installed and is operating. The reason is that the problem is solved by circulating more air than the cooling load requires. The "excess" air bypasses the cooling coil but is handled by the same blower that handles the conditioned air. Since the blower, duct and distribution system must be sized to handle the full air requirement, that requirement must be known in advance.

Use Structural Features

The duct layout for a row house is not too difficult if the house has the typical long hall and stair well along one side (Fig. 1). Here two features of the house may be used to advantage. The first is the long hall itself. This hall is a very convenient location for branch ducts, as shown. The second feature is the high ceiling, which permits the use of side wall distribution from registers mounted high in the room walls adjacent to the hallway.

In any comfort air conditioning problem, the achievement of proper air distribution is of primary importance. Side wall outlets as shown in Fig. 1 are often misused in cooling work if the throw and drop of the air stream are not considered. Throw is the distance between the face of the register and the point where the air stream reaches a given terminal velocity, usually 50 fpm. Side wall registers are selected for a throw which

THIS SPECIAL SERIES ... on subjects of interest to residential air conditioning dealer-contractors is based on the author's wide experience and on constant analysis of the field by American Artisan's editors.	SPECIFIC PROBLEMS ... treated in the next phase of the series covered maintenance, service, installation and management.
IT ALL BEGAN ... with a complete rundown on fundamentals in 20 articles beginning in August, 1952 American Artisan, describing basic operations of air conditioning equipment.	NOW, PRACTICAL APPLICATIONS ... to solve common problems which have been experienced by the author and by dealer-contractors are covered in the current selection of case histories, procedure outlines and specific examples.

falls short of the opposite wall. A good rule is to have the throw about three-fourths the register-to-wall distance.

Use High Wall Registers

Drop is the distance the air stream has fallen below the bottom of the register when it reaches the end of the throw. Drop is a function of: 1) the initial or neck velocity, 2) the throw and 3) the temperature difference between the conditioned air stream and the room air. In new homes with 7 to 8 ft ceilings, it is virtually impossible to select registers for proper high side wall distribution because the air stream enters the occupied zone with only a slight drop. In the home with high ceilings, high side wall distribution is comparatively simple and usually very efficient.

The problem of returning air to the conditioner ordinarily is not a difficult one in the older row house. Here the engineer can take advantage of the large, open halls and stairway. All that is needed is a collecting grille on the first floor. Since the stairway is not part of the living quarters, air flowing down from the second floor usually won't be objectionable.

Find Likely Spot for Unit

For locating equipment the modern suburban home has utility room, ga-

rage or attic space. It also has a yard where an air cooled condenser or a cooling tower can be located conveniently and hidden by landscaping. In contrast, the urban row home may have virtually no yard. Equipment usually must be located in the basement although in some houses there may be a low, flat roof at the rear which is suitable for mounting a cooling tower or air cooled condenser.

Outside Air Available?

While inspecting the basement the dealer-contractor should note carefully the possibilities for obtaining the air needed for ventilation and condensing. This requirement may mean an enlargement of existing wall openings since old row houses commonly have small, stuffy basements.

Many new houses have crawl spaces which can be conveniently used as return air plenums. A dealer-contractor may be tempted to extend this practice to the old house and use part or all of the basement as a return air passage, to save the expense of a return air duct between the grille and the cooling unit. This may lead to trouble, especially if the air passes through any unpaved sections of the basement. The cause of the trouble will be the moisture the air picks up from damp floors and walls. Moisture is capable of penetrating paved floors. In the modern home, we usually

find the crawl space floor is generally poured over a vapor proof membrane to prevent moisture penetration.

Install Outside Air Duct

When a cooling tower or air cooled condenser is located in the basement, the dealer-contractor is sometimes tempted to connect only the fan discharge side to the outside. He may forget that for every cubic foot of air exhausted, an equal amount must enter somewhere else. The worst arrangement is to allow this air to enter the conditioned space by infiltration at doors and windows and then find its way to the basement. The cooling equipment is unlikely to have sufficient capacity to cope with any such additional outside air load, and it is a very inefficient way to operate. An acceptable arrangement is to allow the air to enter the equipment room through a second opening to the outside. The air then finds its way to the intake of the cooling tower or condenser. This arrangement, however, is not acceptable when the air enters at one end of a row house and is exhausted at the other for the simple reason that the normally cool basement will, by this process, become warm and heat will then flow from the basement to the first floor, thereby increasing the cooling load. The

What Is 'Air Conditioning'?

True air conditioning provides comfort in all seasons of the year, according to the American Society of Heating and Air-Conditioning Engineers. The ASHAE defines air conditioning as follows:

"Air conditioning is the process of treating air so as to control simultaneously its temperature, humidity, cleanliness and distribution to meet the requirements of the conditioned space."

best arrangement is to use ducts to carry air both into and out of a tower or air cooled condenser.

Several other items arise in the course of planning a cooling system which require more special attention in an old house than in a new one. One of these is the availability of adequate power. This factor should not be taken for granted at an old location as it might be in a new area. A check with the local power company

should be made as soon as requirements are established.

In air conditioning a row house, another consideration might be discussed with the owner. This is the possibility that the building might some day be converted into a "two flat" apartment house to make it more attractive for investment purposes. If this were contemplated, each apartment should be served by a separate air distribution system and cooling coil. The condensing unit, however, could serve both systems.

We have seen how a dealer-contractor can take advantage of certain features of the row house to plan an air conditioning system, at the same time watching for certain differences between application practices to be observed in older houses and those he employs in the modern structures with which he may be familiar. Although our row house has a steam heating system, the story would not differ greatly for a house with an old warm air system. If all or part of the existing heating system can be used to advantage in the contemplated cooling system, it should be used, the same as the other structural features. On the other hand, the existing warm air system — or any other feature of the house — should not be used if the results fall outside the limits of acceptable practice.

'For Safety's Sake, Use Outside Air'

MODERN HEATING systems play a more important role in today's living than ever before. New construction methods, weathertight windows and the greater use of insulation result in almost airtight homes, observed Sales Manager E. J. Rowder, Hart & Cooley Mfg. Co., at several of the firm's dealer-contractor meetings and sales conferences. He went on to note that fireplaces, kitchen and bathroom exhaust fans, clothes dryers and other accessories which remove large volumes of air from the structure have a direct bearing on the efficient operation of a heating unit. All these factors should be taken into consideration when designing a heating system, he suggested.

"Furnaces, either gas- or oil-fired, need large volumes of air to support combustion," he continued, "and this air is usually taken directly from within the structure along with the air being exhausted by other appliances."

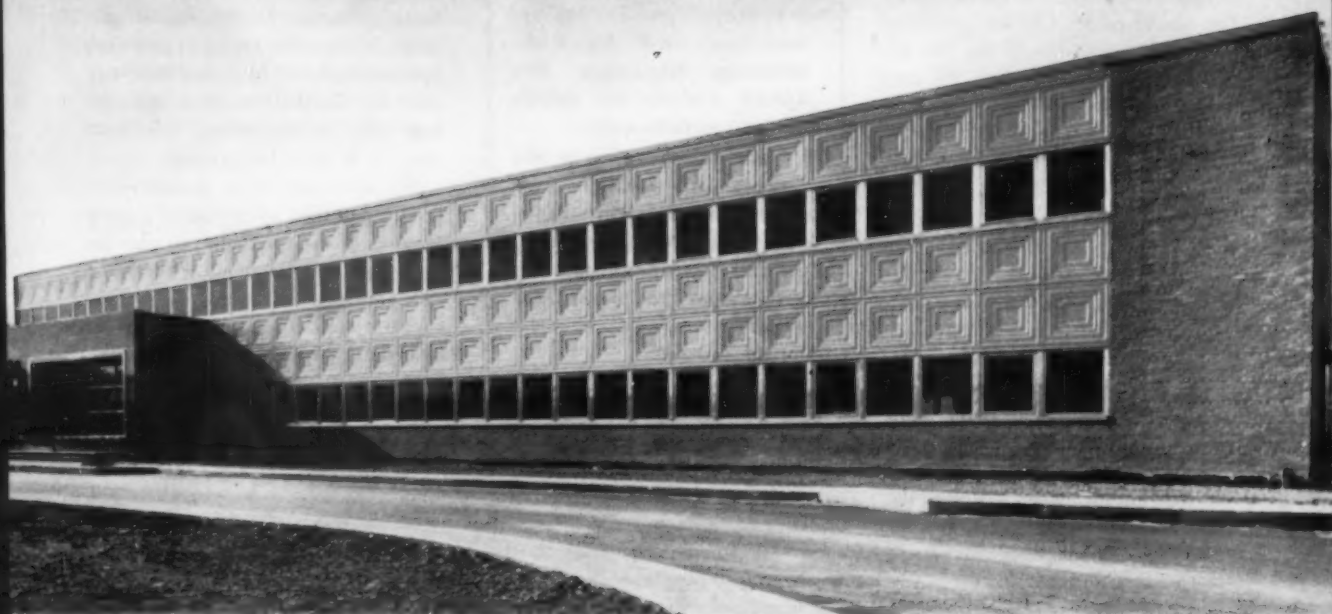
"Negative pressures within a home can easily develop, resulting in poor combustion and loss of efficiency, but the far greater danger is to health and possibly to life itself due to air pollution from combustion gases. Actually,

such negative pressure could cause a reverse flow through the chimney flue or vent on gas-fired units, causing spillage of combustion gases through the diverter.

"In older homes where windows and doors are loose fitting, and the structure itself is not tight, infiltration takes place, providing sufficient makeup or combustion air. In tightly-constructed homes, insufficient combustion air is made available by these means; consequently a method of supplying makeup air should be provided. This can be accomplished in a number of ways; however, the simplest is by use of a rectangular or round duct connected to the return air system (close to a vented attic or other source of outside air) with a barometric damper at the end of the run. When the blower is running, air is taken into the return air system, and when the blower is not operating, the barometric damper closes, preventing entry of cold air into the system."

To assure safer, more efficient heating, Mr. Rowder strongly recommended that a source of outside air be provided for each heating job.

Stainless Steel Curtain Walls



Dress Up New Office Building

Produced from inexpensive dies in a hydraulic punch press, attractive concentric-squared panel design combines with masonry to show versatility of curtain wall construction

THE POPULARITY of curtain wall panels for skyscrapers as well as one, two and three story buildings is fast increasing among architects, who have come to recognize the versatility, beauty and economy of this type of construction. More and more variations in application of curtain walls are showing up in architects' specifications, and many pleasing combinations of curtain wall panels with other types of construction are exhibited in recently completed buildings.

Curtain wall panels were combined with masonry construction in a two story building recently completed at the West Leechburg Works of the Allegheny Ludlum Steel Corp.

This building contains 214 panels of 20 ga type 202 stainless steel, which total about 20,000 lb. Inexpensive dies placed in a hydraulic press produced a very attractive panel design.

Each panel, about 4 ft square, is bolted to a structural grid system that supports not only the curtain wall panels but also the roof.

Surface Is Non-Reflective

A special non-reflective architectural finished stainless steel gives each panel a soft, glowing appearance. Trim members have a satin type finish.



SHEET METAL WORKERS bolt curtain wall panel to building grid system as first step in field assembly procedure

TOPS OF CURTAIN WALL PANELS were capped at the roof with a trim strip of stainless steel to form a weathertight joint



The small (4 × 4 ft) panel is easily adaptable to working around window placements and trim, which are also of stainless steel. The building has 51 pivoted windows alternating with 90 fixed windows. The fixed windows can be washed from adjacent pivoted windows on each side. Window washers can work entirely from the inside of the building.

The stamped panels were bolted approximately every

8 in. to the channels forming the grid system. Behind each exterior sheet is a $\frac{5}{8}$ in. air space and a 2 in. layer of rigid glass fiber insulation to which is fastened a metal facing. Plaster was applied to the metal face for the interior finish.

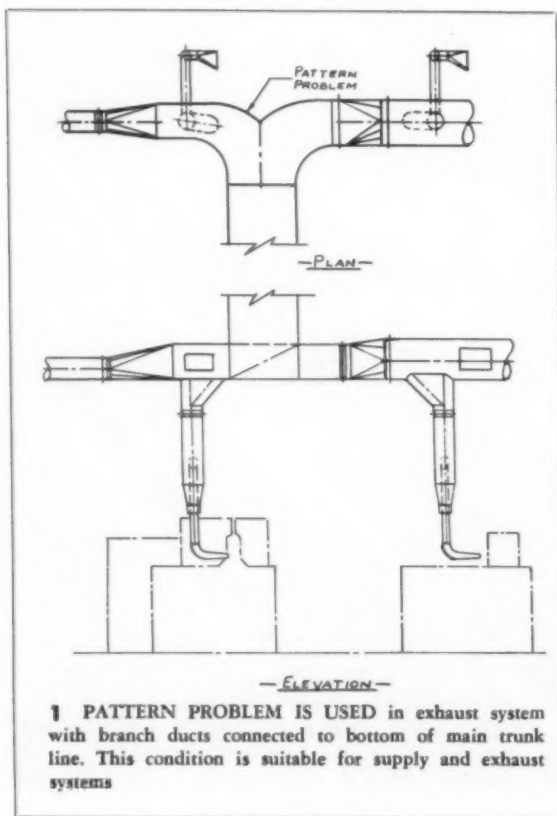
Stainless steel panels of this type, easily fabricated in sheet metal shops, are received enthusiastically by architects as well as owners.

HUGH REID'S SHEET METAL PATTERN

Use Simplified Method to Make a

Tee with Unequal Branches

Straight line pattern development produces a useful fitting for applications where branch duct sizes should be different from each other and from the main trunk



THE PATTERN PROBLEM this month is for a fitting which was developed for an exhaust system used in a production welder operation. This type of fitting is also common to many installations in industrial heating and air conditioning systems.

Where added control of air distribution is required, a damper with a hand operated quadrant should be in-

stalled at the intersection line of the radii on the heel of the elbow.

Note that the branch ducts shown in Fig. 1 are connected to the bottom of the main trunk line. This type of connection is permissible only for air supply and fume exhaust systems. If an attempt had been made to use a bottom connection for dust collection, any drop in velocity would cause a dust fallout down the branch ducts.

The method used to lay out the fitting is straight line development. The proper procedure is to lay out the front pattern first. The developed lengths of the throat and heel patterns can be accurately measured from this pattern.

Given the front and end views of a two way 90 deg rectangular elbow fitting the following is a step-by-step analysis of the pattern problem solution.

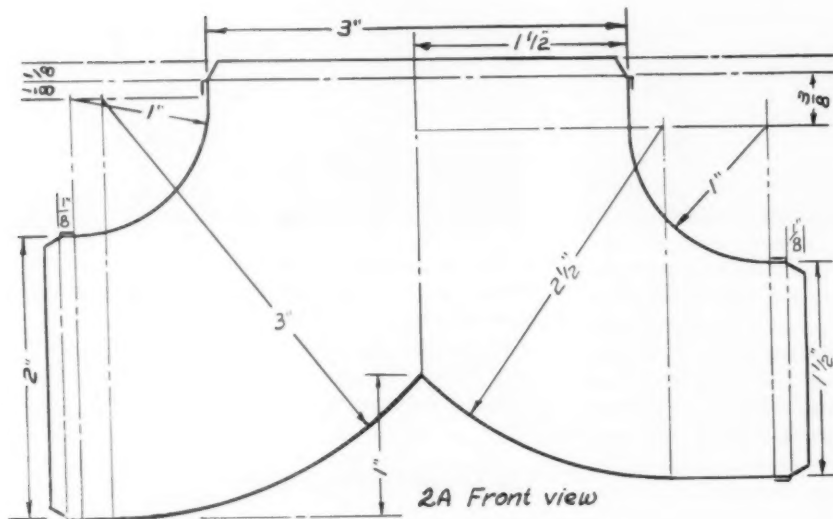
Front and Back Pattern, Fig. 3—

a) Draw the 3 in. horizontal line AB. From point A measure $1\frac{1}{2}$ in. to the right and draw the vertical center line marked CL. From line AB, measure down $\frac{1}{8}$ in. and draw a line parallel to line AB and extending to the left of point A. Mark this work line as 1. Locate point A' directly beneath point A on work line 1.

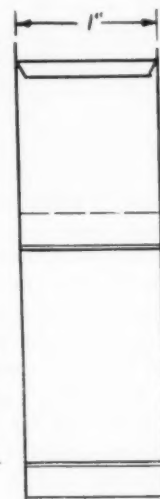
b) From point A', measure 1 in. to the left of the work line and mark the point R1. From this point draw a line downward and perpendicular to work line 1. With R1 as center and given 1 in. radius, draw a 90 deg arc to intersect the vertical line which is perpendicular to work line 1. Label this intersection point as C. From point C measure down 2 in. and locate point D.

c) From point D, draw work line 3 perpendicular to and to the right of vertical line R1-D to intersect the vertical center line. Mark this intersection as point O'. From point O', measure up 1 in. and locate point O. With line length R1-D (3 in.) as radius and point O as center draw an arc to intersect work line 1. Label this intersection point R3. With point R3 as center and radius R1-D draw a long arc to the right to intersect at point O. From point

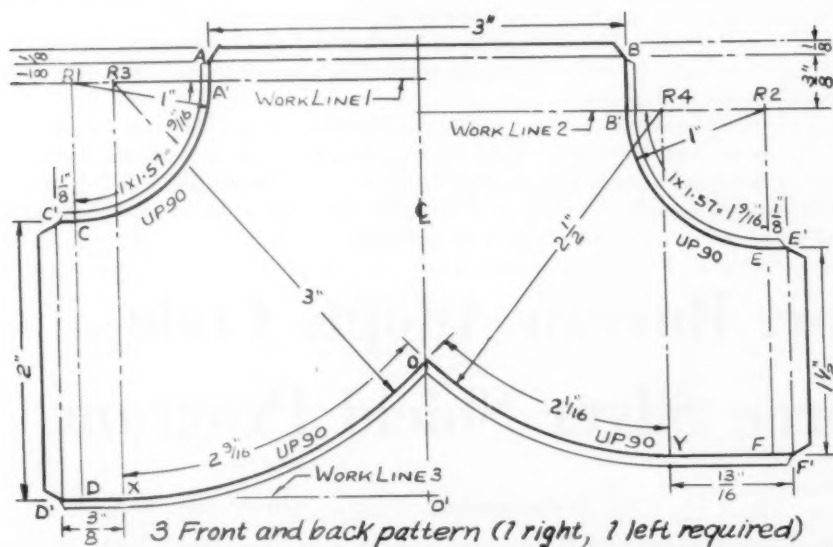
NOTE: ALL DRAWINGS have been reduced 15 percent in size for reproduction on this page



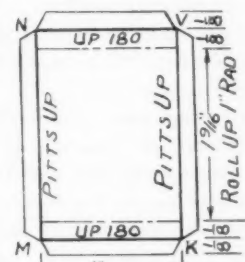
2A Front view



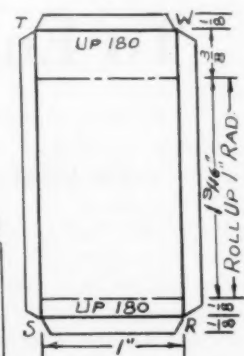
2B End view



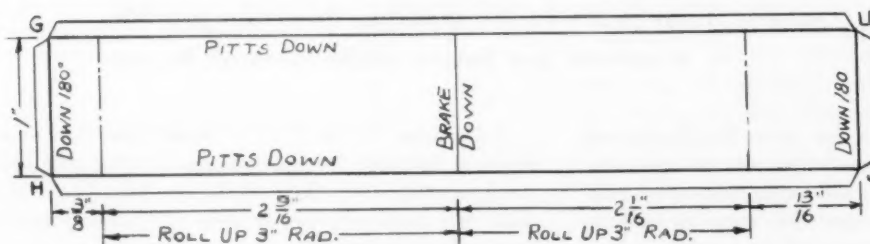
3 Front and back pattern (1 right, 1 left required)



5 Throat pattern



6 Throat pattern



4 Heel pattern

R3 draw a vertical line below work line 1. Where this vertical line intersects the arc, locate point X. From point X draw a line to the left and tangent to the arc.

d) Working from line AB, measure down $3\frac{3}{8}$ in. and draw a line parallel to line AB and extending to the right of point B. This is labeled work line 2. From point B draw a line at 90 deg to line AB to intersect work line 2. This intersection is point B'. Measure given 1 in. radius to the right of point B' on work line 2. Mark this point R2. From point R2 draw a vertical line downward at 90 deg to work line 2.

e) With R2 as center and radius 1 in., draw a 90 deg arc. Where the arc intersects the vertical line, mark the point as E. From point E, measure down the vertical line $11\frac{1}{2}$ in. and locate point F. Set a compass at length R2-F ($2\frac{1}{2}$ in.) and with point O as center, draw an arc to intersect work line 2. This intersection is point R4. With R4 as center and radius $2\frac{1}{2}$ in., draw a long arc to the right of point O. From point R4, draw a vertical line below work line 2. Where this vertical line intersects the arc, locate point Y. From point F, draw a line to the left and tangent to the arc. From line CD measure $\frac{1}{8}$ in. to the left and draw a line parallel to and equal in length to this line. Locate points C' and D' opposite points C and D. From line EF measure $\frac{1}{8}$ in. to the right and draw a line parallel to and equal to this line. Locate points E' and F' opposite points E and F.

f) Calculate the length of the given 1 in. radius 90 deg arcs A'C and B'E by multiplying the given 1 in. radius by the constant 1.57. ($1.57 \times 1 = 1\frac{9}{16}$ in.) With a flexible rule measure arc OX and straight line XD' on the left branch (indicated as lengths $2\frac{9}{16}$ in. and $3\frac{3}{8}$ in.) Measure arcs OY and YF' on the right branch (indicated as lengths $2\frac{1}{16}$ in. and $13/16$ in.)

The Heel Pattern, Fig. 4—

a) Draw a horizontal line and establish point H. From Fig. 3 transfer the lengths $3\frac{3}{8}$ in., $2\frac{9}{16}$ in., $2\frac{1}{16}$ in., and $13/16$ in. to the right of the established point H and mark the extremity of the line as point J. Through the measured points draw lines perpendicular to line HJ.

b) From points H and J measure up the given 1 in. width as shown on Fig. 2B and locate points G and U. Draw the line GU.

The Throat Pattern, Fig. 5—

a) Draw a vertical line and establish point M. Working from the left arc (Fig. 3) transfer the lengths $1\frac{3}{8}$ in., $1\frac{9}{16}$ in. and $\frac{1}{8}$ in. above point M, and mark the extremity point N. Through points M and N draw lines perpendicular to line MN.

b) Transfer the given 1 in. width from Fig. 2B to the perpendicular lines drawn from points M and N (Fig. 5) and mark the points K and V. Draw the line KV.

The Throat Pattern, Fig. 6—

a) Draw a vertical line and establish point S. From the right arc (Fig. 3) transfer the lengths $\frac{1}{8}$ in., $1\frac{9}{16}$ in. and $3/8$ in. above point S and mark the extremity point T. Through points S and T draw lines perpendicular to line ST.

b) Transfer the given 1 in. width from Fig. 2B to the perpendicular lines drawn from points S and T and mark the points R and W. Draw the line RW.

Add allowances for seams and joints and mark the patterns for fabrication.

Comfort Bureau Adopts Code To Enforce Silver Shield Program

. . . in Kalamazoo, Mich., where the new
NWAHACA-sponsored merchandising campaign was launched last
month. Four years in the making, this code provides
a pattern for future ordinances of its type

WITH THE LAUNCHING of the first Silver Shield program in Kalamazoo, Mich. last month (see August American Artisan, page 63), came the need for an enforceable code specifying minimum requirements for warm air heating and air conditioning equipment and its installers, to assure home owners of the industry's interest in their comfort and welfare—as promised in Silver Shield promotions. And this area's industry members had just such a code, ready to be put into operation.

Anticipating the need for a model code that would serve all facets of the industry, local heating and sheet metal associations in three Michigan cities sponsored a study which led to the development and publication of a proposed code covering air conditioning, ventilation systems, heat producing devices, blower and exhaust systems and refrigeration equipment. Glen W. Rynbrand, Kalamazoo heating and air conditioning dealer, and A. Fred Madaus, mechanical equipment inspector for the



OBJECTIVE OF LOCAL Silver Shield program is pointed out to James M. Martin, assistant director of NWAHACA (left) by Glen W. Rynbrand



DETAILS OF CODE to enforce Silver Shield program are explained by Fred Madaus (right), Kalamazoo heating inspector, to Randall Nelson, NWAHACA

city of Kalamazoo, were assigned the task of preparing the proposed code by the three sponsoring associations: the Kalamazoo Sheet Metal, Heating and Air Conditioning Contractors' Association; the Warm Air Heating, Air Conditioning and Sheet Metal Contractors' Association of Battle Creek; and the Greater Muskegon Sheet Metal, Heating and Air Conditioning Contractors' Association.

It required four years to assemble, correlate and verify the data used. Twenty-one sources of information make up the reference list of contributors. The result is a code which, according to the authors, provides the following:

- 1) Complete codes for each field under one cover.
- 2) Ready reference to allied national codes.
- 3) Clarity and simplicity of requirements. (Each item is a separate requirement.)
- 4) Ease in locating a particular requirement.
- 5) Sufficient flexibility for the new or special type installation.
- 6) Provision to keep the code up to date at all times.
- 7) A broader sense of enforcement control, thereby taking the pressure off one man.

8) Ease of adoption. Only the first eight sections would need commission or council acceptance. The remaining rules and regulations can be set up by the board.

The first draft of this code was presented to local contractors, national associations and societies in September, 1955. Over 600 suggestions for changes were accepted and several hundred more were made by the committee as well as individuals called upon to review them.

Excerpts of some of the code's provisions are:

Design relative humidity

The design inside relative humidity shall be a minimum of 25 percent under any inside or outside temperature conditions in buildings requiring temperature differentials over 65 F.

Fresh air requirements

In all slab constructed structures and structures tightly

insulated and weather sealed air shall be introduced from the outside into the return air chamber of the heating system or into the heating equipment area. Heat loss shall be calculated for the introduction of such outside air.

Design conditions

Four classifications for inside conditions shall be recognized by this code:

Type A. In spaces which are occupied continuously for more than three hours or where exceptional cooling is desired, the assumed inside design temperature and relative humidity shall be not more than 78 F dry bulb and 67 wet bulb. Approximately 56 percent relative humidity.

Type B. In spaces of normal occupancy for not more than three hours, the assumed inside design temperature and relative humidity shall be not more than 80 F dry bulb and 68 F wet bulb. Approximately 53 percent relative humidity. This classification will be standard for most installations.

Type C. In spaces where the occupancy is less than one hour or such installations where the design requirements are less exacting, the assumed inside design temperature and relative humidity shall be not more than 82 F dry bulb and 69 F wet bulb. Approximately 52 percent relative humidity.

Type D. In any of the foregoing type spaces, partial cooling (not less than 5 deg dry bulb temperature reduction) may be installed providing such conditions are specified on the application and verified by the consumer in written form.

Infiltration gain shall be provided for in all cases except where a positive pressure is maintained within the room or space to be cooled.

The design air quantity shall be sufficient to extract the surplus heat at the air inlet and outlet temperature specified and in addition shall be not less than the minimum air circulation of two air changes per hour or 25 cfm per person whichever is greatest.

Fresh air supply

Basementless one story residences and one story commercial buildings, tightly constructed structures with basements and structures having one or more exhaust fans shall be provided with a fresh air duct from the outside or from a ventilated attic. This duct shall be of sufficient size to prevent a negative pressure but in no case less than the area of a 4 in. dia duct, and inlet shall be located not less than 8 ft from grade level.

Insulation of ducts

All supply and return ducts in unconditioned areas where the temperature differential is not greater than 30 deg between inside and outside of the duct shall be insulated with 1 in. of fireproof and moistureproof insulation. Where the temperature differential is greater than 30 deg, 2 in. of insulation shall be used. Fresh air ducts shall be insulated in accordance with the preceding requirements and shall be provided with a vapor barrier on the outside of the insulation in any instance where surrounding air may reach its dew point. When inside insulation is used it shall be equivalent to the requirements noted above and shall have a smooth inside face and be of such material which will not break loose or deteriorate.

Ducts through masonry

Where warm air or cold air ducts pass through masonry walls, an air space of at least $\frac{1}{2}$ in. shall be provided between all sides of duct and masonry. This space may be sealed or packed with fireproof and moistureproof insulation material.

Flexible connections

All supply and return ducts shall be provided with a flexible connection to the unit or blower housing where a blower or fan is directly connected to such unit or blower housing.

Material of flexible connector

Flexible connectors shall be made of a base material of metal or mineral, of approved flameproof fabric or asbestos and shall not be subject to deterioration from mildew or moisture.

Length of flexible connector

No flexible connector shall be more than 6 in. in length.

Heating elements in ductwork

Where electric elements are enclosed in ductwork, such elements shall be insulated from the ductwork and provisions shall be made for easy access for maintenance and servicing of element.



CODE REQUIRES insulation of ducts running through unairconditioned space

Summer air conditioning ducts passing through unairconditioned space

All supply air ducts running through unairconditioned space and any supply duct within 6 ft of the plenum except attic space shall be wrapped with moisture- and fire-resistant insulation of $\frac{1}{2}$ in. thickness where air in ducts is not lower than 40 F and 1 in. insulation where air in ducts is lower than 40 F. Insulation shall have a vapor barrier on the outside. Attic ducts require a minimum of $1\frac{1}{2}$ in. insulation with vapor barrier.

Fresh air intake

Outside intake openings shall be located not less than 8 ft above grade level nor less than 2 ft above roof level when driveways and roads are less than 12 ft from the intake or evidence of contaminated air is present. Where such conditions are not present, the outside intake openings may be located at a point not less than 2 ft above grade level. All intake openings shall be provided with safeguards to prevent debris, insects or objects from entering such openings.

Condensate discharge piping

Condensate water shall be drained by piping to an open drain connected to the sewer system or to a closed dry well used only for the disposition of condensate water. The piping shall be sized in accordance with the outlet provided by the manufacturer and shall be increased to the next larger size for each 20 ft of pipe. Where more than one discharge is connected to a common discharge line, the piping shall be increased in size to the combined cross-sectional area of all discharges connected thereto.

Controls on domestic air conditioning

All control devices on domestic air conditioning shall be of the low voltage type.

Combination heating and cooling equipment

Combination cooling and heating systems shall meet the same requirements of their respective codes.

**Check
this
capacity
story**



... See for yourself why we consider the new Tecumseh Model B21U18 the best buy in a full capacity two horsepower refrigeration compressor. Here is a compressor with a measurable 24,000 BTU* capacity and with a proven efficiency of 9.25 BTU per watt! And by designing this increased capacity within the same standardized physical dimensions as other popular Tecumseh twin cylinder models, we are able to offer the B21U18 to you at a lower price than most other two horsepower compressors, all of which have less capacity. Add other features available only through Tecumseh-engineered compressors — such as our new patented anti-slugging protection — and you see why your best buy is always Tecumseh.

Tecumseh has continually provided the industry with better products, priced to your advantage, in any volume required, and within the normally tight delivery schedules demanded. We are determined to continue earning the confidence the industry has placed in us and invite your inquiries on any product problem.

*** Capacity rating of the Model
B21U18 based on:**

- 300 P.S.I.G. Head Pressure
- 77 P.S.I.G. Suction Pressure
- 130°F Condensing Temperature
- 45°F Evaporator Temperature
- 95°F Return Gas
- 95°F Ambient
- 115°F Liquid Temperature
Entering Expansion Valve



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TECUMSEH PRODUCTS COMPANY

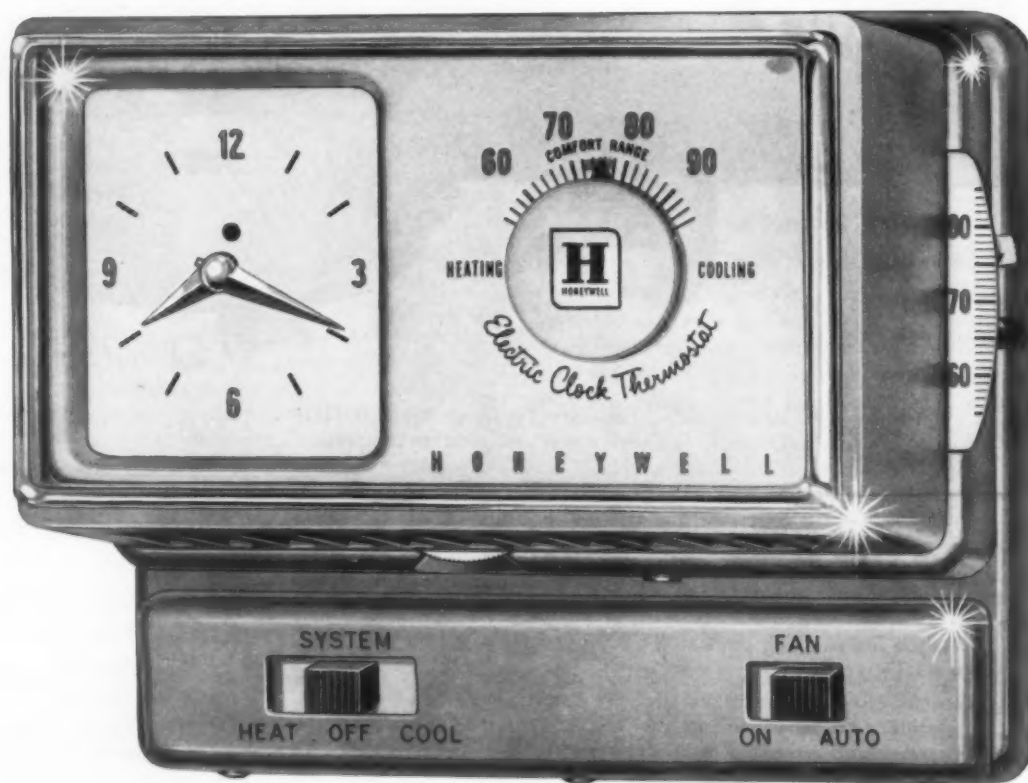
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Now from Honeywell.....

NEW ELECTRIC CLOCK FOR BOTH



New Honeywell Heating-Cooling Thermostat automatically controls your year-round air-conditioning system. When controlling heating, it automatically lowers home temperature at night for cool, economical sleeping, raises it in the morning. When controlling cooling, the

Electric Clock Thermostat automatically raises temperatures at night for economy. In humid areas it can automatically lower temperatures at night for dehumidification. Here at last is the answer to customers who want the ultimate in year-round comfort!

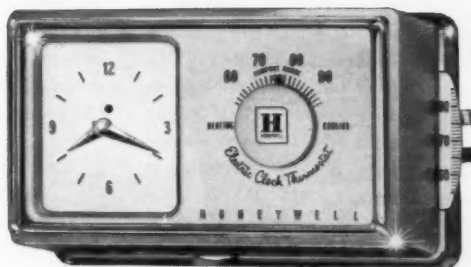
THERMOSTAT

HEATING AND COOLING!

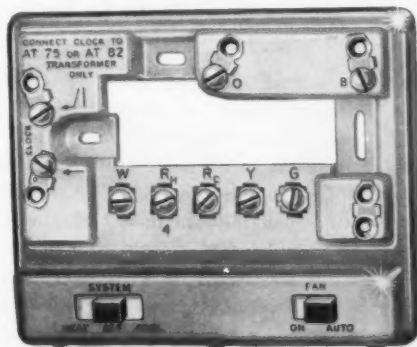
combines all the field-proven features of the famous Honeywell T852 Electric Clock Thermostat plus the versatility of add-on Heat-Cool Sub-base.

Here's a sensational new addition to Honeywell's complete thermostat line. This brand new clock thermostat will give your customers the utmost in luxurious comfort while offering you the "plus" feature of stocking one thermostat and adding a heat-cool sub-base later. Costs very little over the regular "heating only" thermostat. Your customer can use it for heating until he decides to install his cooling system. Then, the simple addition of the sub-base converts it to the world's finest heating-cooling electric clock thermostat!

For detailed information on Honeywell's new Heating-Cooling Electric Clock Thermostat, call your local Honeywell office, or write Minneapolis-Honeywell, Dept. AA-9-145, Minneapolis 8, Minnesota.



Heating-Cooling Electric Clock Thermostat (T861, above) installed for heating only. **Sub-base** (Q426, below) can be easily installed later when cooling system is put in. Together, they make up the Y383 package.



Honeywell



First in Control



Idea Exchange for Dealers, Contractors

Personalized Letters Build Prospect Confidence

Friendly notes, explaining dealer-contractor's awareness of home owner's modernization needs and interest in his problems, pay off in excellent lead-to-sale ratio

A THOROUGH SURVEY of public reaction to its sales promotion activities has paid off for L. C. Troublefield Co., Rock Hill, S. C. When Mr. Troublefield found conventional direct mail pieces were not producing the anticipated results, he developed another approach that has brought excellent return.

The new direct mail campaign is built around several personal letters addressed to individuals (the same letter can be used for all types of prospects because of its versatility). The friendly, person-to-person letters explain to the prospect the advantages of purchasing a warm air heating system from a company that has built a reputation for quality installations. They bring up many of the important points a prospect should consider when he is ready to buy. Some letters cover only one of the many subjects to be weighed, and suggest that further information can be obtained from the L. C. Troublefield Co. without obligation to the home owner.

Warns Against False Savings

One letter informs the home owner that while he might save \$75 on the initial cost of a new system by reducing the number of duct runs, this apparent saving can, within a few years, cost him as much as \$540 in additional electric power and inefficiency

of the heating equipment. The letter explains that under these conditions, heated air cannot be moved rapidly enough across the heat exchanger to maintain the efficiency designed into the furnace at its rated capacity.

Underline Value of Service

Another letter discusses "saving" money on the initial purchase by buying from a firm which provides no service once the installation has been made. Mr. Troublefield's letter then enumerates the advantages of dealing with a company that offers 24 hour service at reasonable cost and advises the reader that an adequate stock of service parts—as maintained at L. C. Troublefield Co.—is a must for every good dealer-contractor.

Each of the letters refers to the National Warm Air Heating and Air Conditioning Association's manuals for designing and installing heating systems and recommends that whoever is selected to make the installation be required to present a load estimating form similar to that available from NWAHACA as evidence that the job has been properly engineered.

CAC Is Explained

The importance of CAC is explained in one letter which states:

"In ordinary 40 F outdoor air temperature, a warm air furnace circulates all the air in the average home through the filters four to six times an hour, removing up to 65 percent of the dirt and dust. This means 75 percent less dusting for the housewife and an average saving of approximately \$2 a month on dry cleaning bills. Painted walls, draperies and upholstery remain bright and fresh twice as long."

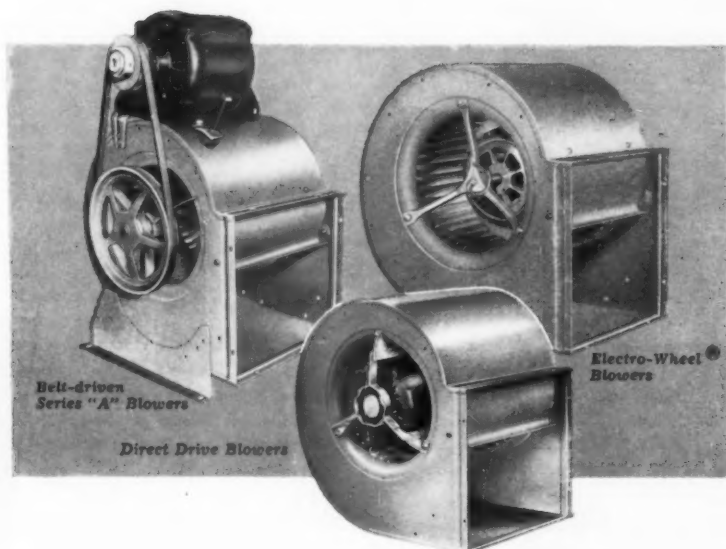
Adequate and periodic inspection and adjustment are recommended in a fourth letter which explains that a properly adjusted furnace will produce 80 percent efficiency, whereas failure to have the equipment periodically inspected and adjusted will result in an efficiency between 50 and 65 percent. This low efficiency is an indication that much of the fuel is wasted, the letter continues. The cost of operating a well designed and well maintained heating system as compared with a poorly designed, poorly adjusted system is shown by cost per day.

Offer Fast Work

Another direct mail campaign tells how quickly a deteriorated or improperly designed heating system can be modernized or replaced.

This series of letters answers the demand for personal attention which is being felt in many areas. It has resulted in higher compensation for the company which has taken the trouble to analyze its approach to prospects and to match this need with a method that is paying good dividends.

**There are good reasons why these leaders
look to LAU —**



THE BIG WHEEL in air moving

**Here's just
a partial list**
(we'll show you more later)

Green Colonial, Inc.
Heil-Quaker Corporation
Henry Furnace Company
International Heater Company
Lennox Industries Inc.
Mueller Climatrol Division
Worthington Corporation
C. A. Olsen Mfg. Company
Peerless Corporation
Round Oak Company, Inc.
Rybolt Heater Company
Stewart-Warner Corporation
The Williamson Company

Engineering advances such as Preslok® construction and Electro-Wheel Blowers. Delivery—quick and sure. Competitive prices. Talk to any of our customers and you'll find they have good reasons for calling LAU to help them move air. Maybe that's why we've grown each year until we sell more blowers and components than any other manufacturer. And isn't that a pretty good reason for seeing LAU about your air moving problems? LAU Blower Company, 2027 Home Ave., Dayton 17, Ohio. OTHER PLANTS at Irwindale, Calif., and Kitchener, Ont.

Leaders look to these LAU Sales-Engineers for on-the-spot help . . .

Cincinnati 30, Ohio
Don G. Jensen
6422 Glade Avenue
Cleveland 24, Ohio
Charles C. Miley
1561 Woodrow Avenue
Cranford, New Jersey
E. C. Wolford
11 English Village

Dearborn, Michigan
J. B. Wallace
9 Byfield Lane
Denver 2, Colorado
Ben T. Clark
1421 Court Place
Elmwood Park 35, Illinois
William J. Lohrey
2047 77th Avenue

Kansas City 14, Missouri
Charles L. Sigman
8906 Holly Avenue
Irwindale, California
G. R. Mergenthaler
15601 Arrow Highway
Prairie Village 15, Kansas
Victor Stewart
7112 Buena Vista

Seattle 55, Washington
William M. Peistrup
19246 Lago Place
Syracuse, New York
Henry Seebach
560 Allen Street
York, Pennsylvania
E. F. Humphrey
327 Lambeth Drive



MEN WHO USE IT SAY THIS ABOUT

Republic's **NEW** Terne Metal Roofing

PHONES - GL 6-4508 - GL 6-4509 - GL 6-4500

THE IRWIN STEEL CO.

STEEL SHEETS - GALVANIZED
HOT ROLLED - COLD ROLLED
ROOFING - HEATING AND SHEET METAL SUPPLIES
1215-19 McKinley Avenue, S. W. - CANTON 11, OHIO

June 9, 1958

Mr. A. L. Veverka
Republic Steel Corporation
Cleveland, Ohio

Dear Sir:

The trade we serve tell us that the new Republic Amber color rosin-base painted terne rolls are having excellent acceptance by our customers. They report that the type of paint you are using is very easy to solder. In fact, the paint actually increases the solderability of the roll.

Many customers inform us that after having used terne metal for many, many years, they have never found a product as easily workable as that which you are now producing.

We were particularly pleased also to learn from the roofing mechanic that he likes the slightly tacky surface of the painted roll inasmuch as it is easier to walk on when it is in position on the roof and, of course, reduces the danger of the workman slipping.

Yours truly,

THE IRWIN STEEL CO.

W. Paul Irwin
W. Paul Irwin
President



It's the business of these men to keep informed on the desires and demands of customers just like yours. They know what they are talking about when they say the demand for Republic's New Amber Color Rosin-Base Painted Terne Metal Roofing is growing. They know about its many customer benefits—benefits that keep buyers

coming back for more—benefits that keep profits rolling up. Interested? Mail the coupon today for complete facts and a Free Sample Sheet. (Shown left to right) Tom Irwin, The Irwin Steel Company, Canton, Ohio; Ott Weimer, Owner, H. R. Weimer Company, Canton, Ohio; Joe Smythe, Sales Manager, The Irwin Steel Company.

H. R. WEIMER DEMONSTRATES WHY CUSTOMERS ARE BUYING



EASIER TO SOLDER—Mr. Weimer says from his own experience: "Republic painted terne rolls sure solder wonderfully, even without fluxing." Amber rosin-base paint actually increases solderability. Moreover, its tacky surface provides greater safety for workmen on the roof.



EASIER TO CUT—With a pair of tinner's snips, Mr. Weimer cuts right through. Rosin-base paint helps you get a firm grip for cutting in irregular patterns and shapes. After installation, this paint is an ideal base coat for weather protective and decorative painting (light shades afford reflective insulation).



EASIER TO FORM—Roll, bead, seam, or bend Republic Terne Metal Roofing quickly into the shape you need for any roofing application.

Republic Terne Metal Roofing is produced in 50-foot seamless rolls, 4" through 28" widths, 1C and 1X gages, with 40-, 20-, and 8-pound coating, plain or painted on one or both sides. Terne roofing sheets are also available in 14" x 20", and 20" x 28" sizes, in 40-, 20-, and 8-pound coatings not painted, packed 112 sheets to a box. Pre-cut flashings come in 5" x 7" size, 1C gage, painted two sides and wired in bundles of 100.

Contact your nearest Republic office for information—or mail coupon at right.

REPUBLIC STEEL

GENERAL OFFICES • CLEVELAND 1, OHIO



REPUBLIC STEEL CORPORATION
DEPT. AA-6331

1441 REPUBLIC BUILDING • CLEVELAND 1, OHIO

Please send FREE SAMPLE SHEET of Republic Terne Metal Roofing, along with complete information.

Name _____ Title _____

Company _____

Address _____

City _____ Zone _____ State _____

Courts Back Fight Against Illegal Price Cutting

If you can prove a competitor is unfairly diverting trade from you by offering merchandise below market prices, chances are you can get an injunction against him

THE PRACTICE of some sellers of heating and air conditioning equipment to advertise these products at what appears to be less than market prices can, in some states, be considered as unfair diversion of trade from a competitor. In one such case, in a southern state, a suit was brought by a competitor against the advertiser.

Competitor Sees Violation

Goods in this instance had been advertised by a dealer for sale below cost on specified dates. This, the competitor maintained in his suit brought for violation of statute, had been done with the intent of misleading the public, unfairly diverting trade and impairing of fair competition. Theme of the advertisement was "Pay Cash: Pay Less."

The judge, granting an injunction against this price cutting activity, referred to the laws of another state which are substantially the rules generally adopted against price cutting. These laws provide:

"Advertising, offers to sell, or sales by retailers or wholesalers at less than cost as defined in this act, with the intent or effect of inducing the purchase of their merchandise or of unfairly diverting trade from a competitor or otherwise injuring a competitor, impair or prevent competition and injure public welfare, are unfair competition and contrary to public policy, where the result of such advertising, offers or sales is to tend to deceive or mislead any purchaser or prospective purchaser or substantially to lessen competition, or unreasonably to restrain trade, or tend to create a monopoly."

In another case, the supreme court of a midwestern state granted an injunction in a suit by a competitor against a dealer's sale of goods which the plaintiff claimed to be "at less than the cost thereof for the purpose and with the effect of injuring competitors and destroying competition."

Holding that the competitor was entitled to an injunction against this price cutting, the court said of the price cutting statute of that state, "The measure is definitely designed to protect the weak against the strong. The strong have no unlimited constitutional power so to use their strength as to crush the weak. Therefore, in the field of trade, why is it not competent for a law bearing on all alike, to bar an artificial and wholly harmful practice tending to eliminate the weak and leave the whole field to the strong?"

"We see therein no violation of the constitutional guarantees of due process. The independent merchant, small or large, is a legitimate object of legislative solicitude. It cannot be otherwise in view of his contribution to the building of, and his present place in our economic structure."

Price Reduction Not Denied

The right of a business owner to reduce prices is not denied him, unless, as judged in another case:

"The reduction of prices is an act lawful in itself. It is the absolute right of the owner of a business. On the other hand, under the guise of exercising an absolute right, it is not lawful according to some authorities, indirectly to interfere with the business, employment or occupation of a third

person where the exercise of the right is with the object of injuring the latter rather than primarily of benefiting the person exercising such right.

"The objection to the position of competitors in this case is that they sought to enlarge a legal right into a legal wrong. Instead of enlarging or dignifying their privilege to cut prices for the purpose of promoting their own business they degraded the same into a wilful wrong when employing it as a weapon for the ignoble purpose of inflicting upon the plaintiff a wanton injury."

Competitors Conspire

This case had been brought about due to the efforts of several competi-

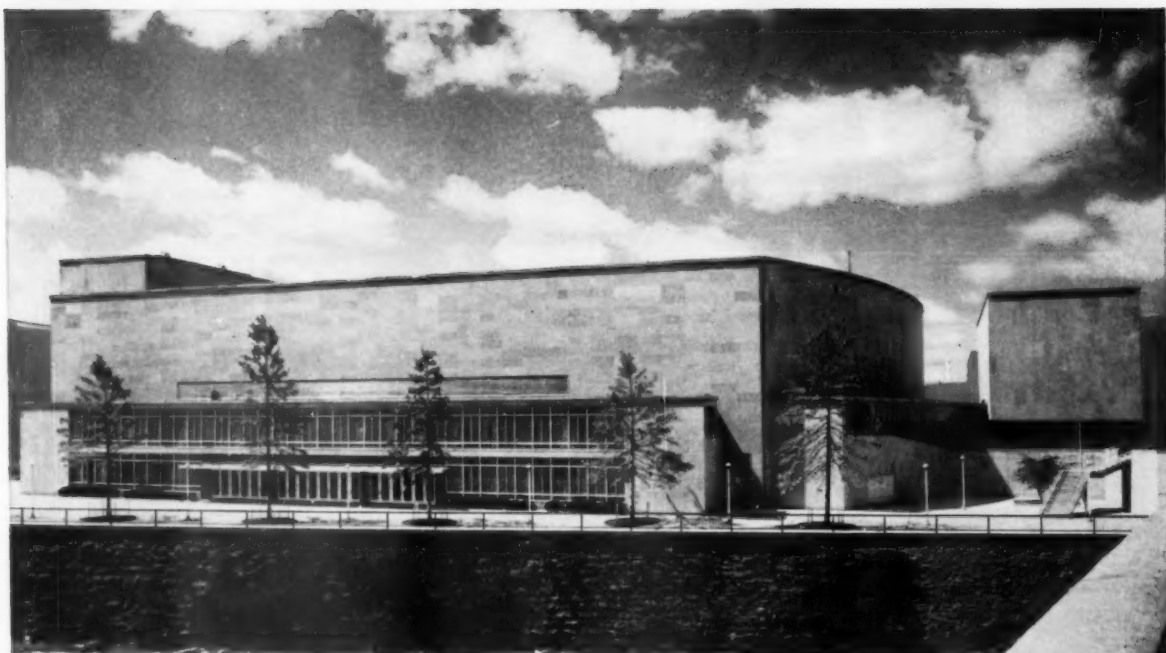
Price cutting is covered in state and federal laws with which dealer-contractors should be familiar. This is the first in a series of four articles dealing with this important subject.

tors who had apparently conspired to force the plaintiff to increase his prices above those he considered as his right to ask. The court said, "Competition in business is permitted, although frequently it destroys those engaged in it. It is always selfish, often sharp and sometimes deadly.

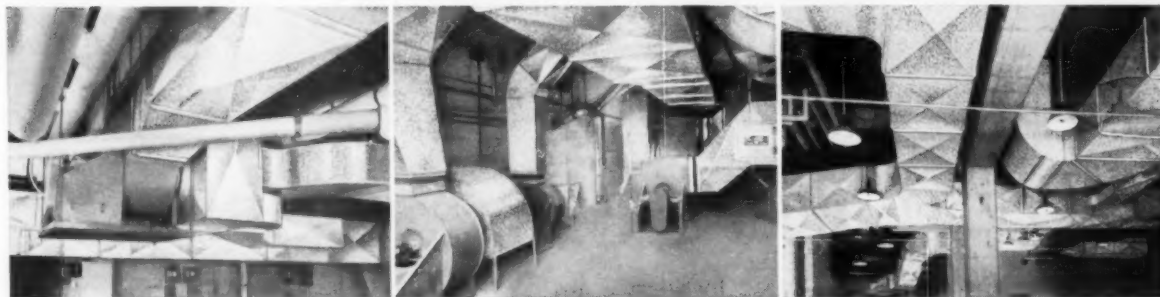
"The fact that a rival in business is vanquished is not of itself sufficient to give rise to a cause of action against his competitor; but the facts must go further and show that the contest was carried on by methods not allowable in such warfare."

Legal price cutting will be discussed next month.

[Note: While this discussion applies to actual cases, it should be remembered that legal rules vary in different states.]



"Air-handling system at huge Rochester War Memorial made of SOFTITE COP-R-LOY..."



Fabricator: Wm. J. Schmitt, Inc.

...because SOFTITE® COP-R-LOY® Sheets have the extra quality needed to take forming and welding without flaking"

—so says Mr. William C. Schmitt, sheet metal fabricator on this 7½ million dollar project. "We chose SOFTITE because of our past experience with both Wheeling Products and Wheeling service. They're both always top-quality and mighty important reasons why we like to buy from Wheeling!"

Why not see for yourself? Use Wheeling SOFTITE Cop-R-Loy on your next job. You'll find that the

controlled copper content of these tough galvanized sheets makes them easy to work... helps you produce a superior-looking job... and assures longer, more economical service life.

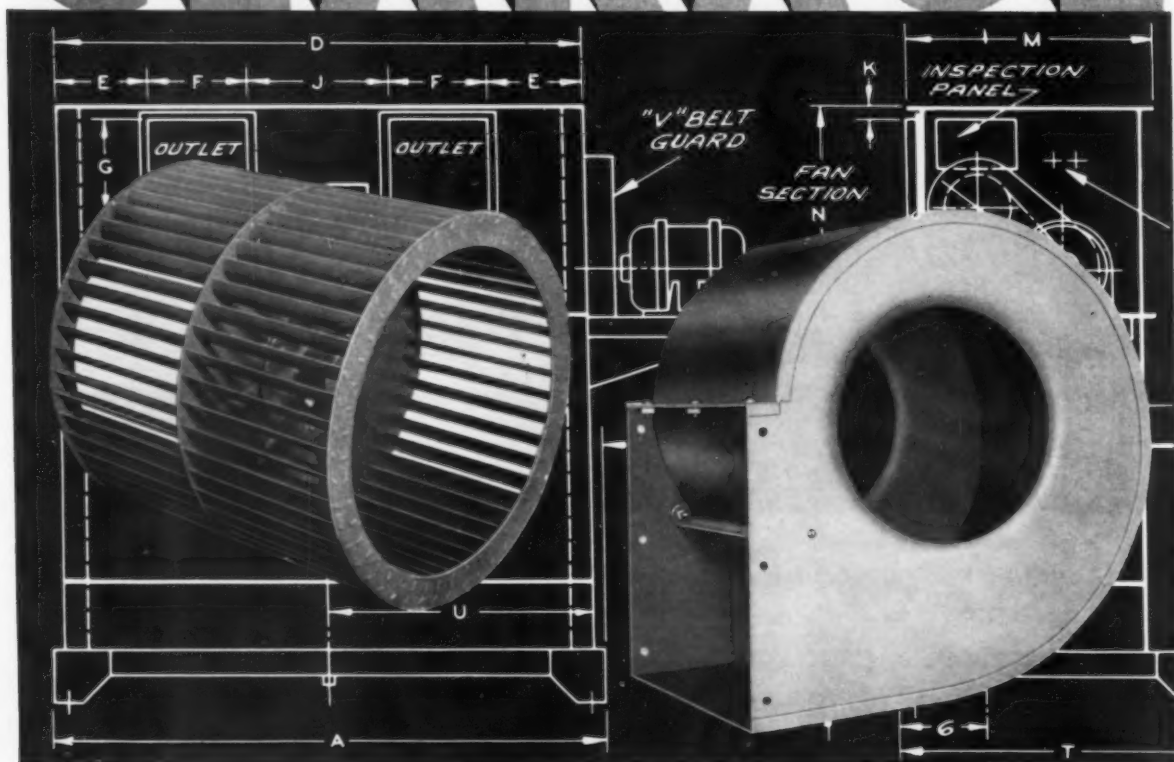
Get full details today from your nearby Wheeling warehouse or sales office. Wheeling Corrugating Company, Wheeling, West Virginia.



WHEELING CORRUGATING COMPANY—IT'S WHEELING STEEL

Wheeling SOFTITE COP-R-LOY... plus other top quality Wheeling Building Products... are warehoused in Boston, Buffalo, Chicago, Columbus, Detroit, Kansas City, Louisville, Minneapolis, New Orleans, New York, Philadelphia, Richmond, St. Louis. Sales Offices: Atlanta, Houston

CLARAGE



Proved answer to high pressures

MANUFACTURERS: Clarage Type DF fan equipment has what it takes! Wheels and housings or complete fans are available in several designs for pressures up to 8". Note these distinguishing features:

- Individual blades are *riveted* to the rim and backplate.
- A large flange on the *cast iron* hub gives added rigidity to the rugged centerplate.
- *Heavy gauge* steel is used for the housing.
- Streamlined housing inlets, wheel blades that are die formed, and precision wheel

balancing on special machines assure efficient, quiet performance.

- Wheels and housings can be hot dipped galvanized for protection against severe moisture conditions.
- Spark-resistant aluminum wheels and other special features and constructions are also available.

Give your products increased saleability. Incorporate Clarage quality—*known* quality that has *proved* its worth to other leading manufacturers.

Dependable equipment for making air your servant

CLARAGE FAN COMPANY

Kalamazoo, Michigan

SALES ENGINEERING OFFICES IN ALL PRINCIPAL CITIES • IN CANADA: Canada Fans, Ltd., 4285 Richelieu St., Montreal



**Results
speak for themselves!
I'm sold on**

McQUAY-NORRIS DEPENDABILITY

"Like most furnace dealers, I've been exposed to a lot of fancy furnace valves and controls, but in the long run I've found that you've got to have dependable performance as well. That's what has built my customers' confidence in me and made my business a success. I've used McQuay-Norris valves for years because I can rely on them!"

Features . . .

- Time Tested by leading manufacturers
- AGA and UL listed for use with natural, manufactured and liquid petroleum gases
- Soft-seat valve with positive seal
- Fail-safe—spring pressure always closes the valve
- Operates in any position
- Resists corrosion, stands up under extremes of temperature
- Stainless steel working parts, special analysis aluminum die casting in valve body, soft seat of special formula Buna N



McQUAY-NORRIS

Manufacturing Company • St. Louis 10, Mo.

The famous
McQuay-Norris
spring-loaded
soft-seat
solenoid valve



NOTE: Spring-loaded
soft-seat valves
were originated by
McQUAY-NORRIS.

48 YEARS IN THE MANUFACTURE OF PRECISION PRODUCTS.



ANNOUNCES A BOLD, NEW PROMOTION PACKAGE



1

All-New Viking Humidifier

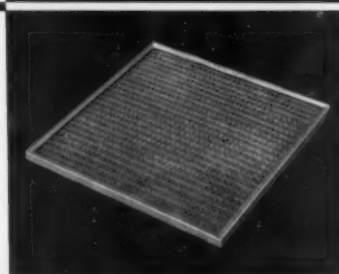
- Lifetime Glass Pan
- New Lifetime Nylon Valve
- New Non-Breakable Plates
- Fastest, Easiest Adjustment Yet



2

All-New Viking 20-Year Air Filter

- Features Wanted Most by Dealers Surveyed Coast-to-Coast
 - Vacuum Cleans . . . No Washing, No Oiling
 - Super Efficiency . . . Depth-Loads to Hold More Dirt
 - Packaged 2 to a Carton . . . One in Display Poly Bag

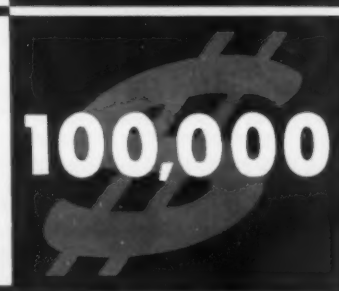


3

\$100,000 Consumer Advertising Program . . . *An Industry "First"*

You're Tied In Directly at the Local Level . . . For Package Sales! Package Profits!

100,000



Contact Your Viking Wholesaler To Tie-In Today!

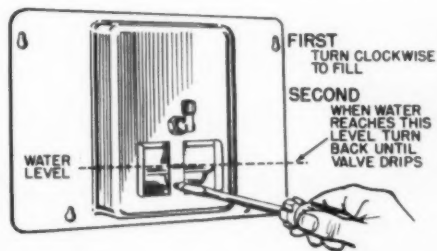
Your New Viking Humidifier Catalog . . . Next Page

VIKING® Air Products • 5601 Walworth Ave. • Cleveland 2, Ohio



New "6000" Furnace Humidifier by **Viking**[®] With a Brand New Nylon Valve That Lasts a Lifetime

**Simple, Fast, Positive
"6000" Adjustment!**



Self-Adjusting Lifetime Nylon Valve!

All nylon construction makes it absolutely impervious to water wear. "Self-Control" principle lets you "set it and forget it".

Famous Guaranteed All-Glass Pan!

Guaranteed for a lifetime against any kind of water or chemical deterioration.

Special! New Unbreakable Magnasil Plates!

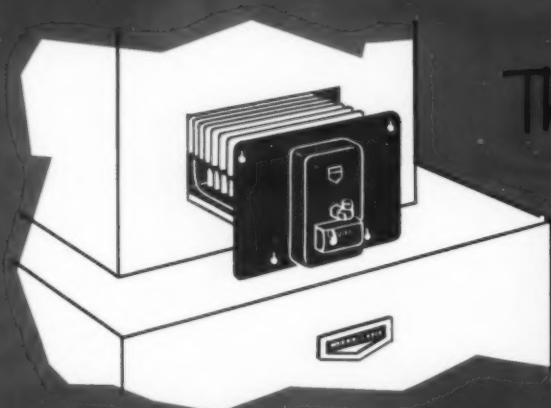
Exclusive new development by Viking means longer-lasting plates that do twice the job.

New! Increased Capacity!

New plate rack permits evaporative capacity for any home from smallest to largest.

Viking AIR PRODUCTS

5601 Walworth Avenue • Cleveland 2, Ohio



The New Viking®

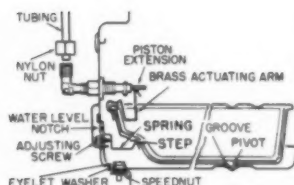
"6000"

Furnace Humidifier

• Plate-type unit to fit any vertical plenum

The Viking "6000" Self-Control Valve:

A Simple, Trouble-free Operating Principle



1. Pan weight opens valve when pan water level goes below "full".
2. Pan fills till its weight reduces its bearing on valve extension.
3. Line pressure seats piston and cuts off water.

Compact

Overall Dimensions

Length 11"
Width 9"
Height 6 1/8"
Shipping Wt. 4 lbs.

Perfect Teammate for the new "6000" — All-New Thirs-Tee Magnasil Evaporator Plates

- Non-Breakable
- Universal Size

Now available
in 5-packs with
or without
racks at your
Viking
distributor.



Without Rack:
Dealer Net Price . . . \$1.45
With Rack:
Dealer Net Price . . . \$2.15

(Also in cartons of 48 packages of 5 plates; shipping wt. 35 lbs.)

New Magnasil Material For Extended Plate Life

Specifications



Shipped complete with all hardware including overflow eyelet assembly, 10' of miracle polyethylene tubing and set of 5 evaporator plates (suitable for up to 100,000 btu input furnaces). Step-by-step installation including handy, full-size opening template and homeowner's service and guarantee registration.

Dealer Net Price . . . \$11.50

Accessories

Viking Saddle Valve



For use on any standard household water pipe. A 3/32" hole drilled in the bottom of a water line lets the pilot tube draw sediment-free water from the top of the pipe. Thick neoprene washer prevents leaks.

Dealer Net Price . . . \$1.10

Viking "6000" Glass Reservoir Pan

For replacement of original pan in Viking "6000" Humidifier in case of accidental breakage.

Dealer Net Price . . . \$1.50

Viking® AIR PRODUCTS

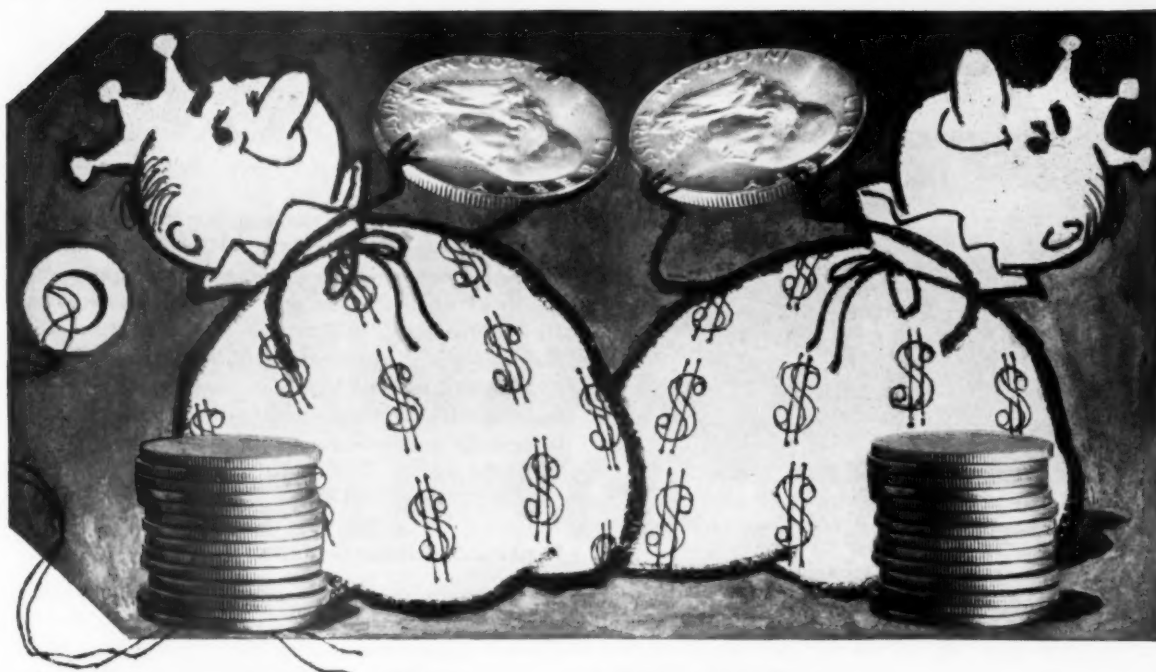
1601 Watermark Avenue • Cleveland 2, Ohio



Litho in U.S.A.

Form # 1113

NEW PRICE POLICY!



★ Double Pay-Off Plan

**ups
your
profit
on**

Now, with Airtemp's new Double Pay-Off Plan you get paid twice—once at the time of sale, and once by Airtemp with Airtemp's new Pay-Off Certificates.

The value of your Pay-Off Certificate will depend on the furnace or air conditioner you sell. But here's the important thing—you can use your Airtemp Pay-Off Certificates just like cash when you order new equipment.

This Double Pay-Off Plan helps you meet price competition and still make a fair profit. There are other reasons, too, why Airtemp dealers

make money—

- Airtemp's trouble-free operation cuts service calls, lets you *keep* your initial sale profit.
- Airtemp's really complete line—297 models. You can satisfy any customer.
- The prestige of the Chrysler name and Chrysler's famous engineering.
- Sales, engineering, service and business-operation training at Chrysler Corporation Service Centers.
- Pre-tested merchandising aids and incentive plans. Factory advertising in your local market.

CHRYSLER

DO MORE BUSINESS

WITH AIRTEMP—

THE FORWARD LOOK IN AIR CONDITIONING

Airtemp

AIRTEMP DIVISION, CHRYSLER CORP.
DEPT. AA-9-58 DAYTON 1, OHIO

Please send me full information on an Airtemp franchise.

NAME.....

ADDRESS.....

CITY.....ZONE.....STATE.....

WHAT THE ASSOCIATIONS ARE DOING

Indiana Group Hears Talk on Electric Heating



PLANS FOR A NEW MEMBERSHIP DRIVE were outlined at the Gary district meeting of the Sheet Metal and Warm Air Heating Contractors' Association of Indiana. From left are Ben Flock, George Primich, J. W. Ridgway and Merle Daily

RECENT SURVEYS indicate that there are more than a quarter of a million electric space heating customers on power company service lines. This growth in the use of electricity as a source of heat energy was revealed by Clyde M. Barnes, editor, *American Artisan*, at the district meeting of the Sheet Metal and Warm Air Heating Contractors' Association of Indiana, held in Gary, July 18. The Lake County (Indiana) Warm Air Heating and Sheet Metal Contractors' Association was host to the 92 state association members and guests who attended.

The advantages and disadvantages of electric panel heating were discussed by Mr. Barnes. He also outlined several methods warm air heating dealer-contractors might use in offsetting any effort on the part of other types of contractors to get into the heating industry.

Cites Advantages of Air Distribution System

Advantages of an air distribution system over an electric panel system were listed as: 1) air is filtered and clean; 2) humidity can be controlled; 3) ventilation is provided; 4) temperatures are even throughout the room; 5) system is adaptable to summer air conditioning.

Mr. Barnes pointed out that the public's acceptance of summer air conditioning is one of the strongest reasons for the large increase in the number of heat pump installations being made. In Indiana there were 118 heat pump installations at the end of 1956, with 79 of them having been made during the year 1956. Early tabulations for 1957 indicate an even larger number installed during that year.

Heat pumps offer all the advantages that are advanced

as reasons for favoring electrical panel heating systems, plus the advantages of the air distribution system, Mr. Barnes stated. He suggested that dealer-contractors encountering competitive conditions brought about by increased pressure for electric panel heating would do a prospect a real service by pointing out the superiority of the air distribution system over the electric panel system. He also suggested that American Artisan's *Standards for Rating Heating Systems* card could be used very effectively to show a prospect how to purchase a heating system and to point up the fact that electric panel heating fails to meet the requirements of a "Good" system as spelled out on the card.

Reports on Purdue Business Management Course

The district meeting included a report by president J. W. Ridgway on the association's first dealer-contractor business management course held at Purdue. The subjects covered during the two day course and the opinions expressed by those attending warrant this becoming an annual activity of the association, Mr. Ridgway said.

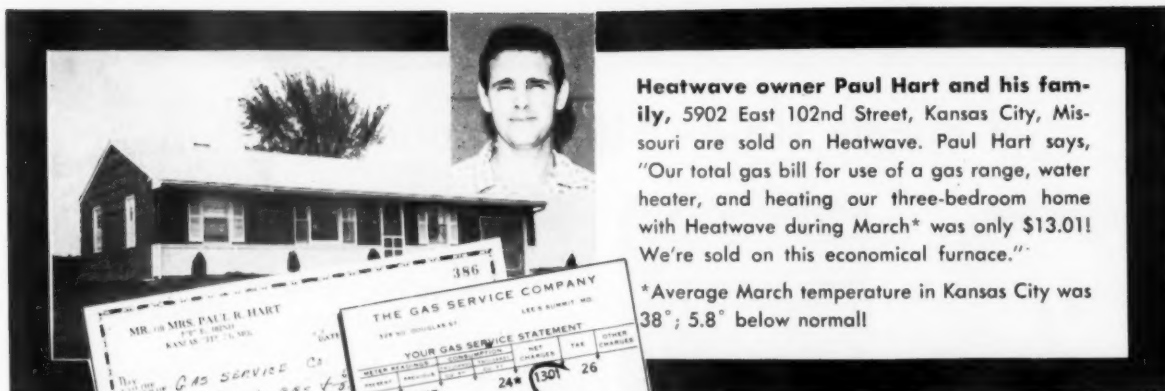
Plans for increasing membership in the association were also described by Mr. Ridgway. Twenty-seven team captains have been appointed to contact every sheet metal and warm air heating-residential air conditioning dealer-contractor in the state. Special tools to help captains and team members to point out the importance of membership in the association are to be prepared and distributed in the very near future.

Information on how to approach a prospect and develop him into a customer was presented by Woody Faison, Viking Air Products Div., National-U.S. Radiator Corp. Mr. Faison explained how well-directed advertising develops a prospect's acceptance of a dealer-contractor's company and the product he represents as well as making it easier to close more sales.

Kalamazoo Speaker Discusses Costs

HOMER BRUNDAGE was guest speaker at a recent meeting of the Kalamazoo Sheet Metal, Roofing, Heating & Air Conditioning Contractors' Association. Mr. Brundage, chairman of the board of the Brundage Co., described the operations of the Brundage firm, placing particular emphasis on the problems of cost and overhead. Other speakers discussed the National Warm Air Heating and Air Conditioning Association's "Silver Shield" program and the place of liability, property damage, and products insurance in the dealer-contractor's operation.

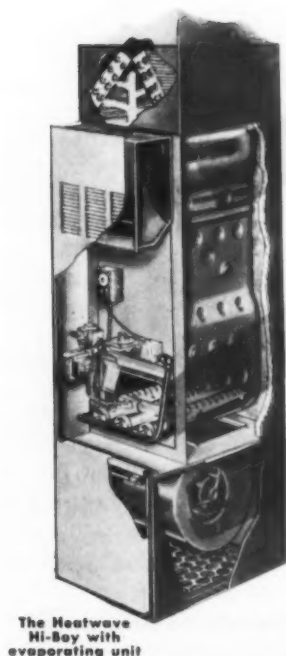
(More association news on page 90)



Heatwave owner Paul Hart and his family, 5902 East 102nd Street, Kansas City, Missouri are sold on Heatwave. Paul Hart says, "Our total gas bill for use of a gas range, water heater, and heating our three-bedroom home with Heatwave during March* was only \$13.01! We're sold on this economical furnace."

*Average March temperature in Kansas City was 38°; 5.8° below normal!

LOW HEATING BILLS HELP YOU **SELL** HEATWAVE!



The Heatwave Hi-Boy with evaporating unit

ZONE 1—HEAT EXCHANGER! A heavy gauge, die-formed steel heat exchanger, electrically welded into a rugged one-piece, gas-tight unit, especially designed for rapid heat transfer.

ZONE 2—BURNERS! Cast iron burners with milled slots give clean, efficient operation! Heatwave is adaptable for LP installation, too!

ZONE 3—BLOWER! Sized for both heating and air conditioning . . . insuring proper circulation and maximum utilization of the heat produced by the Heatwave unit.

ZONE 4—INSTALLATION! Proper installation and sizing of unit to the job.

EVERY HEATWAVE UNIT IS ENGINEERED TO DELIVER MAXIMUM PERFORMANCE IN THESE "ECONOMY ZONES"

ECONOMY IN SUMMER, TOO! Heatwave's new remote condensing unit with larger condenser face area gives lower operation head pressure and lower liquid temperature, resulting in **lower** operating costs and reduced mechanical failures in Heatwave's economical air conditioning. This season sell the unit that gives your customers more for their money . . . gives you more to sell . . . Heatwave year 'round air conditioning!



A Product Of The Southwest Manufacturing Company, Aurora, Missouri
A Subsidiary of The F. E. Myers & Bro. Co., Ashland, Ohio
. . . Manufacturers Of The Famous Myers Pump

Georgia Holds Ninth Annual Election



NEW PRESIDENT and vice president of Georgia association are Charles W. Bryan Jr. (left) and John R. Tufts

MEMBERS OF THE SHEET METAL, Roofing, Heating and Air Conditioning Contractors Association of Georgia met at the General Oglethorpe Hotel, Savannah, on July 26 for their ninth annual election and business meeting.

Charles W. Bryan Jr., Macon, was elected president. John R. Tufts, Atlanta, was elected vice president, and Wendell Townsend, Atlanta, was named treasurer. B. L. Noblitt continues as executive secretary.

District directors elected are: Athens, Joel Wier Jr.; Atlanta, John A. Lance Jr.; Macon, Jack West; Rome, James M. Brown; Savannah, John L. Kenny.

New members of the board of directors are: K. F. Dunlap Jr., Macon; W. M. Jones Sr., Augusta; I. C. Mock, Augusta; Leroy Still, Atlanta; James H. Welch, Valdosta; L. D. Herndon, Columbus; Charles A. Sapp, Albany; W. H. Dunlap, Macon; J. D. Knox, Atlanta; I. Marvin Kelly, Augusta; J. D. Booth, Atlanta; and Henry McDowell, Savannah.

Featured speaker was W. M. Jones Sr., president, Augusta Roofing and Metal Works, and two time president of the Georgia association. Speaking on the subject of "Management Today,"



W. M. Jones Sr.

Mr. Jones pointed out that "never before in the history of national business has such a high degree of efficiency been required. I would say a manager must practice being an adviser, a magician, a diplomat, a detective, a surgeon, and a writer-producer-director.

"Management's prime duties in our type of business can be listed as follows:

- 1) Know your cost of productive jobs.
- 2) Pay your bills promptly.
- 3) Keep your business liquid.
- 4) Bend over backward to make business contacts that will help your business and yourself.

- 5) Exercise every possible friendliness toward your customers.
- 6) Handle all personnel problems as if they were your own personal problems.
- 7) Don't try to outguess your competitors—base your quotations and bids on costs alone.

Mr. Jones also discussed the value of membership in a trade association, pointing out that all businessmen need an effective trade association and that the success of such an association is dependent upon the support given by its members.

Other speakers included John R. Tufts, Conditioned Air Engineers, Atlanta, who discussed problems in heating and air conditioning; J. D. Knox, R. F. Knox Co., Atlanta, who covered problems in sheet metal; and John A. Lance Jr., Lance Roofing Co., Atlanta, who discussed roofing problems.

Los Angeles Hears Heat Pump Talk

THE SOUTHERN CALIFORNIA EDISON CO. and the Los Angeles Department of Water and Power were co-sponsors of the June meeting of the Institute of Heating & Air Conditioning Industries. B. M. Osborn, a registered engineer retained by utilities to undertake field studies on the operating costs of heat pumps, was the principal speaker. Mr. Osborn, tracing the growth of the heat pump's popularity, said that there are now 26 firms manufacturing this type of equipment as compared with only eight or nine a year ago.

Heat pumps were exhibited at the meeting by a number of manufacturers, including the Airtemp Div. of Chrysler Corp., Carrier Corp., Fedders-Quigan Corp., Forston Co., Lennox Industries Inc., O. A. Sutton Corp., Tuck Aire Furnace Co., Typhoon Heat Pump Div. of Hupp Corp., Weathertron Dept. of General Electric Co., Westinghouse Electric Corp., and York Corp.

Atlanta Association Develops Guarantee

THE MASTER ROOFING AND SHEET METAL Contractors Association of Atlanta, Inc., has developed a five year guarantee on sheet metal work installed in connection with roofing in the greater metropolitan Atlanta area. The form, which includes an endorsement by the association as well as the guarantee of the individual member contractor, covers both labor and material. The guarantee has been approved by the American Institute of Architects and the Georgia branch of the Associated General Contractors.

(More association news on page 92)



Carry only 4 Purolator filter refills for 98% of all filter replacements

And now is the time to protect every oil burner with a Purolator filter . . . protect yourself from emergency calls this winter

This fact that 4 Purolator Oil Burner filter refills take care of 98% of your oil burner installations is exactly half the story. There's also this: *now* is the time to check the filter on every burner you service. Why? Because dirt causes by far the most failures when burners are turned on in the fall, and, if last winter's filter is still in, it won't stop it all. Purolator filters stop *all* dirt as

small as specks only .0005 of an inch! They also have 5 times the dirt retention and flow capacity of the biggest competitive units. Give 'em that kind of protection now (it lasts at least a year without servicing), and you'll take it easy during cold snaps—free from most of the usual emergency calls.

One more thing: a simple cross reference chart has been worked out by

Purolator that shows you which refills will fit all popular makes of filters. It's yours for the asking—and the coupon below makes it easy to ask, right now.

TO: PUROLATOR PRODUCTS, INC.
RAHWAY, N. J.

Please send me your oil burner filter cross reference chart.

Name _____

Title _____

Company _____

Street _____ City _____

Zone _____ State _____

Filtration For Every Known Fluid

PUROLATOR
PRODUCTS, INC.

RAHWAY, NEW JERSEY AND TORONTO, ONTARIO, CANADA

Milwaukee Dealer-Contractors Hold Annual Picnic



SUPPLIERS' TROPHY for best golf score was won for second year in a row by Art Curtes (left). Robert S. Schmieder, executive secretary of Milwaukee association presents the award



CONTRACTORS' TROPHY for best golf score was won by Ben Brozek (right) for second time. Lyle O'Leary, picnic committee chairman, congratulates the winner

ONE HUNDRED AND FORTY-TWO members of the heating, air conditioning and sheet metal industry "got away from it all" on July 30, when they attended the annual stag picnic of the Sheet Metal Contractors' Association of Milwaukee held at the Port Washington Country Club. Entertainment was planned to provide everyone with his favorite game. Those desiring exercise had golf (63 played), horseshoes (24 played), or baseball (20 played and 28 offered advice). Those less fond of exercise played gin rummy, sheephead and pinochle.

When the golf scores were all in, it was found that Ben Brozek, Brozek Heating and Sheet Metal Co., had success-

fully defended the contractors' trophy he won last year. Art Curtes, Auer Steel and Furnace Supply Co., who won last year's suppliers' trophy, also retained his claim to the prize for another year.

The suppliers' baseball team, smarting under two successive defeats (1956-57), slugged four contractor pitchers out of the box to win the 1958 contest by a score of 10 to 5.

The horseshoe pitching contest ended in a tie for first place between Mike Poja, Poja Heating and Sheet Metal Co., and Mike Dorn, Wisconsin Furnace Co. Third place went to F. Poling, Joseph S. Babush Co.

Good Promotion Wins Goals for Alabama

THE ROOFING, SHEET METAL, Heating and Air Conditioning Contractors' Association of Alabama recently released a detailed list of objectives achieved between the 1957 and 1958 conventions.

These goals were reached through the efforts of an active group of officers and board of directors working together to promote their association and the services it offers. During the past several months, the association has:

- 1) Employed a full time executive secretary.
- 2) Rented space for association offices.
- 3) Increased contractor membership to a total of 102.
- 4) Increased associate membership to a total of 42.
- 5) Organized four local chapters in four districts.
- 6) Approved new dues schedule.
- 7) Printed 500 association booklets.
- 8) Changed name of official bulletin to RASMHACALA News.
- 9) Increased bulletin's circulation by 100 percent.
- 10) Increased number of pages in the bulletin from four to eight.
- 11) Increased frequency of publication to once a month.
- 12) Sent the largest group of officers and directors ever to attend a FLACALAGAB meeting (Asheville, N. C.)
- 13) Mailed board meeting minutes to all officers and directors.
- 14) Approved a resolution to work closely with the Carolinas, Georgia and Florida associations' labor relations committees.
- 15) Designed and fabricated a booth for the Southeast Trade Exposition in Atlanta.
- 16) Issued certificates, decals, and dues seals to all association members.

(Continued on page 94)

Revolutionary!

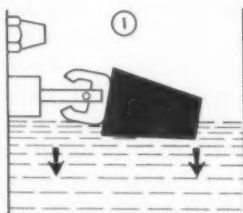
KEENEY

CLIMATIZER

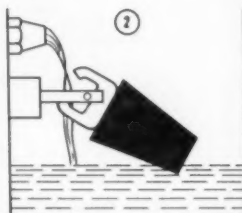
ELECTRIC HUMIDIFIER



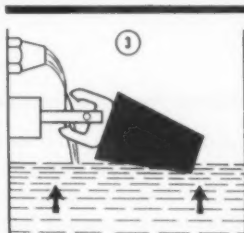
water level controlled by the float switch jet pilots rely on



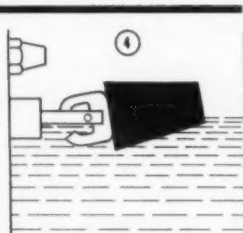
Switch, completely enclosed in float, rides lowering water with imbedded rocker magnet in ready position.



At low water, magnet trips switch. Normally closed, solenoid valve opens, instantly lets water in.



Switch rides rising water. Float made of nitrogen-exploded rubber, has cellular construction, cannot sink.



At desired water level, magnet again trips switch. Solenoid valve closes, instantly shuts water off.

POSITIVE HUMIDIFICATION!

Exclusive, built-in heating element produces a vapor which rises directly into air stream. No evaporation plates!

MAGIC COVER!

Prevents crud accumulation. Regardless of water conditions, keeps microscopic particles in colloidal suspension until exhausted in the vapor escaping through the holes.

SMALL, COMPACT, EASY TO INSTALL

Model 250—wired to operate when blower is ON.

Model 251—wired with electric plug for continuous operation.

NOTHING TO JAM, CLOG OR FAIL

WRITE FOR
COMPLETE
INFORMATION!



THE KEENEY MANUFACTURING CO.
NEWINGTON, CONNECTICUT

Follow the leader — KEENEY

WITH THE ASSOCIATIONS

(Continued from page 92)

- 17) Organized one new district (Opelika).
- 18) Sponsored a dinner meeting for associate members (November 29, 1957).
- 19) Sponsored a dinner meeting for Mobile contractors (January 10, 1958).
- 20) Purchased code books on heating and air conditioning from all associations that have codes for legislative committee.
- 21) Appointed news reporters for each district.
- 22) Provided for reimbursing officers and directors for traveling expenses when on association business.
- 23) Held the biggest convention in its history (1958).

- 24) Encouraged organization of ladies' auxiliary.

Association secretaries interested in details of the programs conducted to accomplish these objectives can write to the Alabama association's executive secretary, B. M. Johnson, Roofing, Sheet Metal, Heating and Air Conditioning Contractors' Association of Alabama, 405 Frank Nelson Bldg., Birmingham, Ala.

The Alabama association will be host this year at the annual joint meeting of the governing boards of the associations of Alabama, Georgia, Florida and the Carolinas. The joint meeting will be held at the Bankhead Hotel, Birmingham, Sept. 26-27.

WAHI Pushes Public Relations Program



DAR KNOWLES (extreme right), executive director of Warm Air Heating Institute, explains heat loss calculation factors to cast and crew of institute's movie on good heating

THE BOARD OF DIRECTORS of the Warm Air Heating Institute of Northern California and representatives of the Pacific Gas & Electric Co. were the first to view the institute's recently produced color movie, "The Case of Missing Comfort." The movie, designed to show the public the type of comfort they can expect from a good warm air heating system, will be available to members for showings to civic groups, luncheon clubs and similar organizations.

The institute recently launched an advertising campaign with an ad appearing in a regional magazine and 35 northern California newspapers. All dealer-contractors, manufacturers and jobbers on the association's mailing list were sent reprints of the ad well ahead of publication so that they might develop local tie-in publicity.

The institute has also assisted local groups in preparing displays for booths at state and county fairs. According to surveys made by the Pacific Gas & Electric Co., the display in the "Hall of Flame" at the California state fair in Sacramento was seen by some 228,000 adults.

Objectives of the Warm Air Heating Institute are:

- 1) To establish a central office for the purpose of collecting, coordinating and disseminating material to (a) promote the use of warm air heating to architects, engi-

neers and the general public and (b) inform the public on the benefits of modernization, regular servicing, and proper engineering.

- 2) To disseminate to warm air heating dealer-contractors information on approved methods of heat calculation; better methods of installation; new methods of heating, and proper accounting and management procedures.

- 3) To endeavor to write and establish a uniform code for heating and get it adopted in all localities.

- 4) To furnish technical speakers at meetings of organizations of warm air heating dealer-contractors, architects, engineers, general contractors, home builders, etc.

- 5) To discourage bid peddling.

- 6) To make use of all information on warm air heating available from organizations such as the National Warm Air Heating and Air Conditioning Association and the American Society of Heating and Air-Conditioning Engineers.

Chicago Group Meets for Tournament

CHICAGO WARM AIR GOLF ASSOCIATION members and guests held the second session of their annual golf tournament at Itasca Country Club July 22. Low gross score was turned in by William O'Connor, Acme Furnace Fitting Co. Under the Peoria system of handicapping used to obtain gross scores R. Shake of Arrow Petroleum Co. won first prize. Other prizes were awarded to:

Dan Heffernan, Acme Furnace Fitting Co.

J. Gats, Gats Heating Co.

George Bunt, Jones Heating & Air Conditioning

Len Miller, Austin Sheet Metal Works

Charles R. Bennett, formerly with Armstrong Heating Supply Co.

Harry Himelblau, Himelblau Associates, Inc.

Jerry Anderson, Anderson Heating Co.

Final session in the annual tournament is scheduled for Sept. 30 at Ruth Lake Country Club, Hinsdale, Ill.

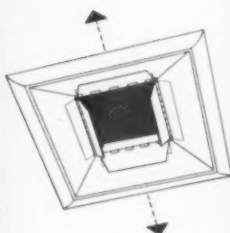
(Coming Events on page 96)

THE MARK OF QUALITY

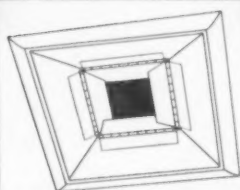


Uni-Flo

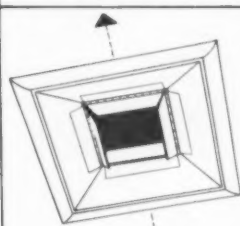
ENGINEERED AIR
DISTRIBUTION



ADJUST AIR PATTERN
(2-way opposite pattern
illustrated)

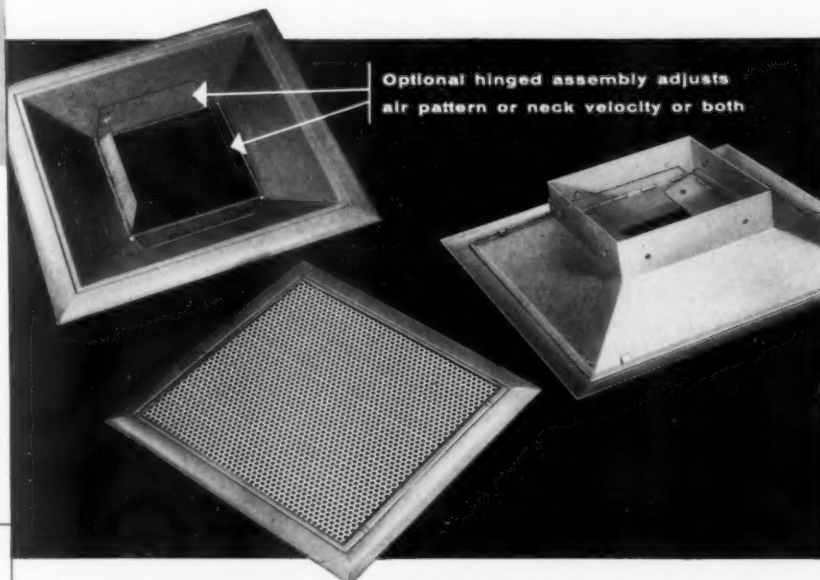


ADJUST NECK VELOCITY
(Adjustment for
maximum velocity illustrated)



**ADJUST AIR PATTERN
AND NECK VELOCITY**
(Adjustment for maximum
velocity with 2-way opposite
air pattern illustrated)

COMPLETE FLEXIBILITY OF ADJUSTMENT ON THE JOB WITH UNI-FLO CEILING DIFFUSERS



**... hinged adjustment assembly saves
time and trouble; provides correct
air distribution to meet any conditions**

The hinged adjustment assembly available optionally on Uni-Flo Square and Rectangular diffusers provides complete flexibility on the job to meet air distribution requirements of variable air patterns and throw. The units can be readjusted easily at any time to meet interior alterations. The attractive exterior of Uni-Flo diffusers is not altered.

Adjustment of the blades to the horizontal position provides maximum neck velocity and throw. Adjustment of one or more of the blades downward provides 1-way, 2-way, or 3-way air patterns. Correct positioning of the blades will control both air pattern and neck velocity.

For complete information and prices, call your nearby Barber-Colman Uni-Flo representative, or write today.

BARBER-COLMAN COMPANY

Dept. 1, 1106 Rock Street, Rockford, Illinois

Air Distribution Products • Automatic Controls • Small Motors • Industrial Instruments • Aircraft Controls • Electrical Components • Overdoors and Operators • Molded Products • Metal Cutting Tools • Machine Tools • Textile Machinery

Coming Events

September

Sept. 30 — Chicago Warm Air Golf Association tournament. Ruth Lake Country Club, Hinsdale, Ill. George Bunt, secretary, Jones Heating & Air Conditioning, 305 W. Hillgrove, La Grange, Ill.

October

Oct. 5-8 — National Association of Sheet Metal Distributors, annual meeting. Marlborough-Blenheim Hotel, Atlantic City, N. J. Thomas A. Fernley Jr., executive secretary, 1900 Arch St., Philadelphia 3.

Oct. 12-15 — Refrigeration and Air Conditioning Contractors Association National, annual convention. Broadmoor Hotel, Colorado Springs, Colo. Ray Kromer, executive vice president, 10510 Park Lane, Cleveland 6.

Oct. 13-15 — American Gas Association, annual convention. Municipal Auditorium, Atlantic City, N.J. C. S. Stackpole, managing director, 420 Lexington Ave., New York 17.

December

Dec. 1-3 — National Heating and Airconditioning Wholesalers, annual convention. Hotel Statler, Cleveland. W. R. Bull, executive director, 1200 W. Fifth Ave., Columbus, Ohio.

Dec. 1-3 — American Society of Refrigerating Engineers, semi-annual meeting. Hotel Roosevelt, New Orleans, La. R. C. Cross, executive secretary, 234 Fifth Ave., New York 1.

Dec. 2-3 — National Warm Air Heating and Air Conditioning Association, committee meetings. Statler Hotel, Cleveland. George Boeddener, managing director, 640 Engineers Bldg., Cleveland 14.

Dec. 4-5 — National Warm Air Heating and Air Conditioning Association, annual convention. Statler Hotel, Cleveland. George Boeddener, managing director, 640 Engineers Bldg., Cleveland 14.

1959

January

Jan. 17-22 — National Association of Home Builders, annual convention. Conrad Hilton Hotel, Chicago. Daniel Grady, convention chairman, 1625 L St., N. W., Washington 6, D. C.

Jan. 26-29 — American Society of Heating and Air-Conditioning Engineers, 65th annual convention. Bellevue Stratford Hotel, Philadelphia. A. V. Hutchinson, executive secretary, 62 Worth St., New York 13.

Jan. 26-29 — International Heating and Air-Conditioning Exposition, Commercial Museum, Philadelphia. E. K. Stevens, exposition manager, International Exposition Co., 480 Lexington Ave., New York 17.

February

Feb. 12-14 — Sheet Metal and Roofing Contractors' Association of Minnesota, annual convention. Radisson Hotel, Minneapolis. Ray Kraus, convention chairman, General Sheet Metal Corp., 508 S. 7th, Minneapolis.

March

Mar. 9-11 — Sheet Metal Contractors' Association of Wisconsin, annual convention. Hotel Schroeder, Milwaukee. Robert S. Schmieder, executive secretary, 8320 W. Bluemound Rd., Milwaukee.

Mar. 18-20 — Michigan Heating & Sheet Metal Association, annual convention. Fort Shelby Hotel, Detroit. N. J. Biddle, executive secretary, 3035 E. Grand Blvd., Detroit 2.

April

Apr. 29-May 4 — Oil-Heat Institute, annual convention. Olympic Hotel, Seattle, Wash. R. H. L. Becker, managing director, 500 5th Ave., New York 36.

May

May 27-30 — Sheet Metal and Air Conditioning Contractors' National Association, Inc., annual convention. Broadmoor Hotel, Colorado Springs, Colo. J. D. Wilder, executive secretary, 170 Division St., Elgin, Ill.

TR 125
wall
thermostat



more to sing about

You get more to sing about...more to *sell*...
when your central heating appliances
feature controls designed, engineered
and backed by the name she knows best.....

ROBERTSHAW

Manufacturers of gas home heating, water heating, oven, range and top burner controls.

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EQUIPMENT DEVELOPMENTS

The latest information on manufacturers' developments is presented here with brief summaries of the applications of these products. For additional product information which is available, see this month's New Literature department

Multi-Zone Air Conditioner

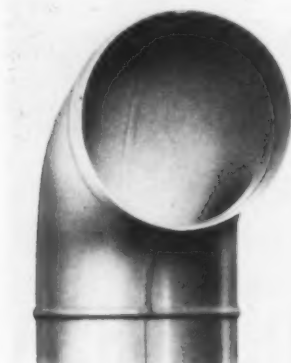
LINE OF MULTI-ZONE air conditioning units in eight sizes with capacities ranging from 3400 to 36,000 cfm—*American Air Filter Co., Inc., Dept. AA, 355 Central Ave., Louisville, Ky.* Sectionalized unit is engineered to maintain design conditions under varying loads in



each zone of the system to be air conditioned. "Roll-O-Vent" automatic filter section is said to assure constant air delivery at all times, make filter changing automatic and save maintenance costs. Features are fire resistant insulation, multiple access panels, opposed acting zone control dampers with self-aligning bronze bushings. Coils can be furnished for direct expansion or other applications.

Die Stamped Elbows

"LAMINAIR-FLO" die-stamped, two piece 90 deg elbows designed to reduce friction loss and static pressure in high velocity air movement systems—*United Sheet*



Metal Co., Inc., Dept. AA, 540 Drexel Ave., Columbus 9, O. Two die-stamped sections of 20 ga galvanized steel are welded together longitudinally to produce

elbows of 3, 4, 5, 6, 7 and 8 in. diameters. Elbows are engineered to reduce friction loss due to turbulence up to one-third over segment elbows, according to the manufacturer.

Humidifier Line

MODELS SF-10 and SW-5 humidifiers with centrifugal atomizers which produce fine water vapor without



heat—*Walton Laboratories, Inc., Dept. AA, 1186 Grove St., Irvington 11, N.J.* Unit features accordion filter with 620 surface areas. Model S-5 evaporates 1 gph; water and electrical equipment are required for installation, the company states.

Squeezer Tong

SWIVEL HEAD squeezer tong designed for application in closing seams on duct work and other sheet metal products—*Reiner & Campbell Co., Inc., Dept. AA, 19 Euclid Ave., Newark 5, N.J.* Tool is used on all four



sides in closing seams; head can be swiveled in vertical or horizontal positions. No hammering is required. Tong will close over any standing seam at 90 deg angle, according to the manufacturer.

Centrifugal Fans

SERIES 7000 HEAVY DUTY and mechanical draft fans designed for handling abrasive gases at elevated temperatures—*Westinghouse Sturtevant Div., Dept. T-225-*



MINUTEMAN!

Your steel service center starts delivery even as you place your order!

In every way, your local steel distributor is geared to keeping production lines rolling. He's ready to rush the amount, quality, size and shape of steel to meet almost any conceivable demand—on the double. He's your on-the-spot insurance against the plant shutdowns and lost contracts that can be caused by in-plant steel shortages.

On a regular basis, his facilities, stocks and fast delivery service can be integrated with your production needs. He is, truly, the service center of the steel industry. And he's only a phone call away.

Call him for any quantity of Weirkote continuous-process zinc-coated sheets, Weirzin electrolytic zinc-coated sheets, hot- or cold-rolled sheets or any type of steel you may need for any type of production job.



**WEIRTON STEEL
COMPANY**

WEIRTON, WEST VIRGINIA

a division of

NATIONAL STEEL CORPORATION

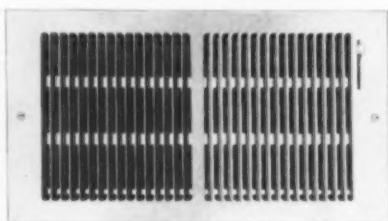
equipment developments

(Continued)

AA, 200 Readville St., Hyde Park, Boston 36. Rated to handle 10,000 to 500,000 cfm and pressures up to 70 in. water, units operate in temperature range from 20 to 850 F. Unobstructed gas passage over open radial blades provides self-cleaning action for blades. Housing and inlet boxes are welded steel with access doors, are braced for working pressures and split for wheel removal. Units may be equipped for capacity control with parallel flow, ball bearing, inlet box louver dampers.

Heating-Cooling Diffuser

"AIR-MASTER" combination heating and summer air conditioning register-diffuser designed especially for add-on air conditioning systems in older homes—A &



A Register Co., Dept. AA, 8327 Clinton Rd., Cleveland 9. Air flow is adjustable by lever from 35 deg upward to 35 deg downward. Vertical fins are factory set to diffuse air evenly to both sides 22 deg; vertical settings can also be changed. Unit installs on wall or baseboard, on inside or outside walls.

Summer Air Conditioner

"CONDAIRE" SELF-CONTAINED summer air conditioning unit which is said to flow twice the normal blower capacity through the condensing coil with one con-



densing air blower—Williamson Co., Dept. AA, 3500 Madison Rd., Cincinnati 9, O. Unit has two centrifugal blowers and two blower motors (one each for conditioned air distribution and one each for refrigerant condensing air). Ducts can be used to supply and exhaust condensing air. Unit may be installed entirely indoors.

Solenoid Valves

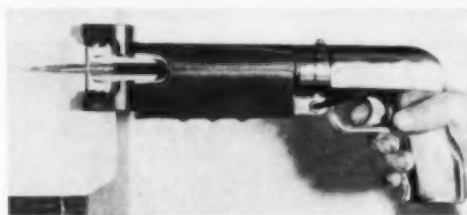
LINE OF SOLENOID valves designed for various applications—Controls Co. of America, Dept. AA, 2450 N. 32nd St., Milwaukee 45. Series 291 valves in brass or stainless steel have six orifice sizes. Small unit is de-



signed for tight corner use such as in humidifiers. Two-way valve can be used for air, gas, water and oil and other fluids. Models 271, 272, 273 and 274 are for main liquid line valve control on multiple cooling systems as well as bypass valve to prevent motor overload. Valves have four orifice sizes and several sweat and pipe connection sizes. Bodies are bronze. Models 67 and 73 are multi-purpose units with brass bodies. Model 67 is available in one orifice size, two body styles and five models. Model 73 is available in three orifice sizes, four body styles and four models.

Fastening Tool

"FLITE-CHECK" powder actuated fastening tool with safety feature which prevents overdriven fastener from being fired through weak spot in wall or ricocheting



—Ramset Fastening System, Winchester-Western Div., Olin Mathieson Chemical Corp., Dept. AA, 12117 Berea Rd., Cleveland 11. Tapered interceptor jaws prevent free flight of overpowered fastener by stopping fastener before it leaves the tool. Pulling trigger fires cartridge which seats special fastener into various non-brittle materials including steel up to 1 in. thick.

Dehumidifier Line

REDESIGNED LINE of dehumidifiers in smaller models, said to remove up to 3 gal of water from room air daily

THE DR. PHILLBROOK HOME, LOS ALTOS, CALIF. / PAUL JAMES HUSTON, ARCHITECT, PALO ALTO, CALIF. / CHARLES MEADE, SHEET METAL WORKS, PALO ALTO, CALIF.



NOW

FOLLANSBEE TERNE GIVES ROOFING AN EXCITING NEW DIMENSION

seamless

FOLLANSBEE seamless TERNE HAS UNUSUAL VERSATILITY FOR THE CREATIVE ARCHITECT

It can be formed into many contemporary designs

It can be custom colored

It affords permanent protection

It is safe

It is easy to install

It is economical

WHAT IS FOLLANSBEE TERNE?

As a word, terne means three. As a metal, Follansbee TERNE is the combination of three metals—steel, lead and tin. More properly, it is copper-bearing cold-rolled strip steel with a lead-tin coating. The coating is an alloy of 4 parts lead to one part tin. This makes TERNE's surface perfect for painting and soldering. Since TERNE is basically steel, its coefficient of expansion is lower than any other roofing metal; it is fire-proof, weathertight, windproof, and will last more than a lifetime.

You can form it—and it will never crack

**You can paint it immediately—
no special treatment is needed**

FOLLANSBEE

STEEL CORPORATION

FOLLANSBEE, WEST VIRGINIA

SEND TODAY FOR ADDITIONAL INFORMATION & YOUR FREE COPY OF STANDARD SPECIFICATIONS FOR FOLLANSBEE SEAMLESS TERNE ROOFING

The Newest Concept in DAMPER HARDWARE ELGEN'S BALL-O-MATIC®

PAT. PENDING

For the Manufacture of
Multi-Blade Dampers



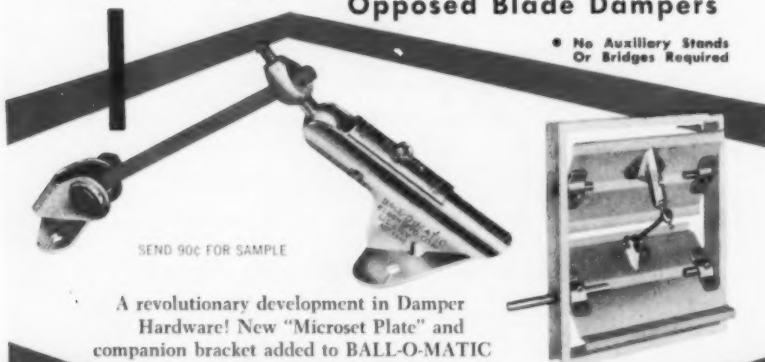
SEND 50¢ FOR SAMPLE

For the first time...absolutely self-aligning
(and non-binding) Damper Hardware!
Streamlined Heavy-gauge tubular design with
solid brass ball-jointed rod holder is held
in predetermined position by powerful lifetime
stainless steel spring. Exclusive positioning
marks by Elgen offer fast, easy installation.

OPPO-MATIC® For Positive Locking Action on Opposed Blade Dampers

PAT. PENDING

• No Auxiliary Stands
Or Bridges Required



SEND 50¢ FOR SAMPLE

A revolutionary development in Damper
Hardware! New "Microset Plate" and
companion bracket added to BALL-O-MATIC
ends over-riding and fluttering...
eliminates all other stops!

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SILENT DUCT • VANE RUNNERS • LOUVER RUNNERS • FABRIDUCT
DAMPER HARDWARE • INSULATION ADHESIVE • DUCT TAPE

Don't wait...
Write to Elgen for
FREE Brochure
and construction
detail chart!

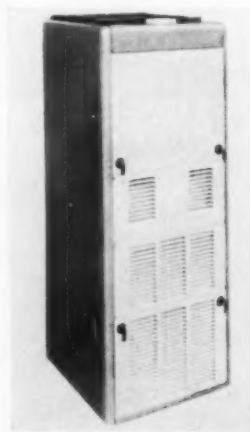


equipment developments (Continued)

—Coolerator Div., McGraw-Edison Co., Dept. AA, Albion, Mich. All models are available with or without humidistat control. Each unit has hose connection fittings and 8 qt water collector containers. Units are on swiveling casters. Units have been reduced 7½ in. in height, ½ in. in width and 2½ in. in depth from 1958 models.

Counterflow Furnaces

MODELS CFD-10, CFD-14 and CFB-27 gas-fired counterflow furnaces designed for perimeter heating—Tuck-Aire Furnace Co., Dept. AA, 2045 Evans Ave., San Francisco 24. Model CFD-10 is 10 in. wide, designed for underfloor or slab duct installation or



as free standing unit for direct heating. Unit is in four sizes from 30,000 to 50,000 Btu. CFD-14 is 14 in. wide, in seven sizes from 60,000 to 100,000 Btu. CFB-27 unit is designed for perimeter heating with provisions for air conditioning using underfloor or slab ducts. Larger models are in seven sizes from 75,000 to 150,000 Btu. Featured are single point suspension heat exchangers designed to minimize expansion noises; slide-out motor blower assembly; built-in filter racks; "heat exchanger within a heat exchanger" to impede spilled gases and provide more heating surface.

(More new equipment on page 108)

MULTI-VENT[®]

**"INDUSTRIAL" AIR DIFFUSER
DELIVERS DRAFT-FREE AIR AT LESS THAN 2½¢ per CFM!**

The MV-100 is a low cost air diffuser which will permit a large number of air changes per hour and at the same time provides such quick entrainment that air velocity drops to approximately 50 FPM within the occupied zone.

This means not only draft-free comfort for workers, but also consistently low rates of air motion which will not interfere with production. In addition, the even air distribution delivered by MV-100 can maintain temperature variation within 2 degrees . . . an important factor in "process cooling" for many industries.

Simple to install in new or existing exposed duct work, the MV-100 air diffusers have a cadmium plate, rustproof finish, and are furnished with built-in volume control valve and air-seal gasket. Write for detailed literature and the name of the Multi-Vent sales and engineering representative in your area.

The RAND McNALLY Company
offset printing pressroom.
MV-100 industrial diffuser solves
critical air distribution problem.



MV-100 Industrial Air Diffuser

**the
PYLE-NATIONAL
company
multi-vent division**

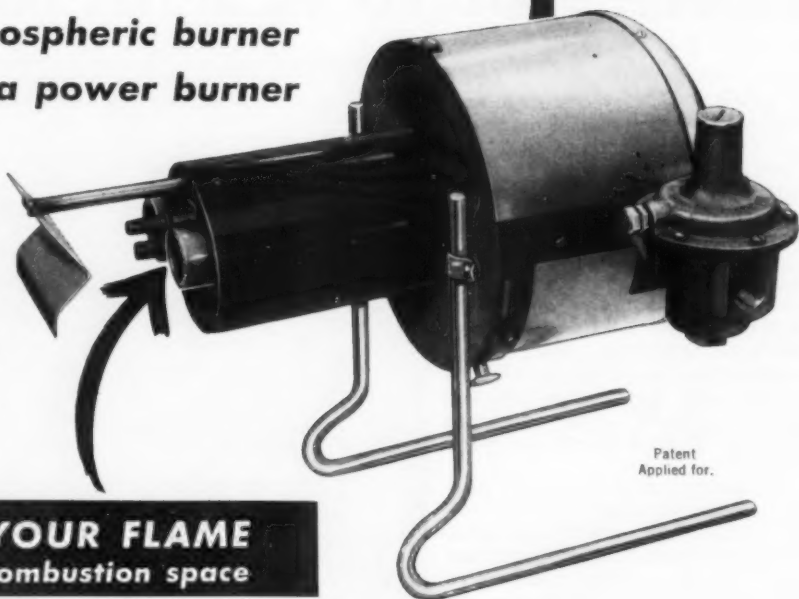
Where Quality is Traditional
1369 N. Kostner Avenue,
Chicago 51, Illinois

SALES AGENTS IN PRINCIPAL CITIES
OF THE UNITED STATES AND CANADA

TWINSHOT[®] Magic!

At last — an atmospheric burner performing like a power burner

The totally-different "TWINSHOT" gas conversion burner with its multiple burner tubes is the most compact, simplest, easiest to install. Fifteen pounds of silent efficiency. All combustion air is delivered to the point of use, giving unparalleled stability of flame and pilot.



TAILOR YOUR FLAME
to fit any combustion space



Exclusive V-3 TUBES HAVE 3 GAS VELOCITIES

Three different gas-air velocities in each burner tube provide unusual flame retention, eliminate turbulence and noise.

- Mounts in oil burner flange, or leg supported.
- Pilot, burner tubes rigidly aligned.
- Competitively priced.
- Entire assembly removable without disturbing any adjustment.
- In most cases, RETAINS FULL OIL RATING OF FURNACE OR BOILER.
- 2 Models — A.G.A. listed — 70,000 to 280,000 BTU input.



See your International distributor, or write us today for full information and catalog sheets.

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Solve your motor problems with Century Electric's complete fractional-horsepower line

You can make your job easier with Century Electric's complete line of fractional-horsepower motors. Here's how:

Easy ordering—You save time because you get answers to all motor problems from one source. This means you don't have to shop around for the motor you need. You name it—capacitor, jet pump, unit heater, oil burner, brake, gear—any one you want, and in all types of enclosures too.

Fast shipments—From Century Electric's complete stock you can get a motor for any standard application. In addition, motors are packed in sturdy boxes so if you reship you know they'll arrive in good condition.

Application know-how—You want to be sure you have the *right* motor for the job. And if you need expert help, you can get it from your nearest Century Electric sales engineer. He knows motors inside and out because he sells, applies and thinks motors day after day.

This is why you get *more* than just a motor from Century Electric. You get a quality product, fast answers and engineering application know-how on motors up to 400 hp—all from one source.

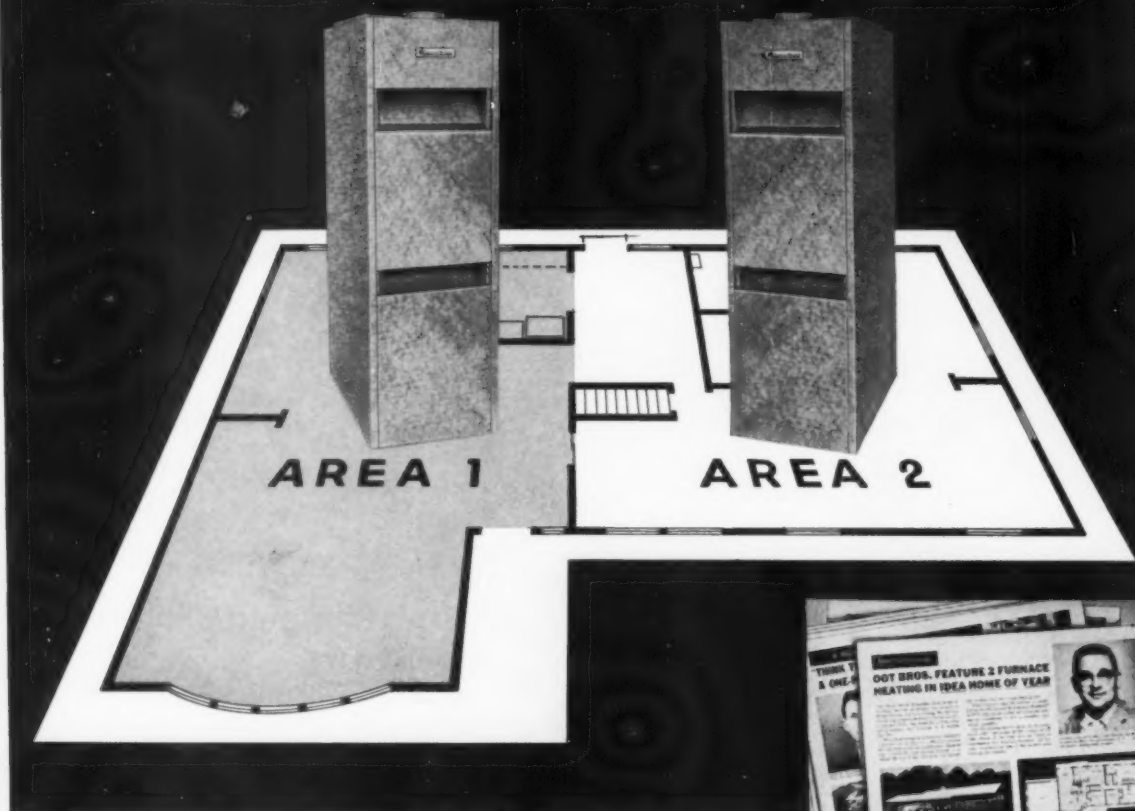
CENTURY ELECTRIC COMPANY

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Century

2 FURNACES FOR THE PRICE OF 1

for model home Balanced Heat Installations



DEALERS ENJOY NEW PROFITS

with Unusual 2-Furnace Promotion to Builders

The visual sales appeal of a two furnace installation—with its readily appreciated advantages of greater comfort, longer furnace life and lower fuel cost . . . makes the heating system the most important *new* selling feature in any home. Builders are quick to realize that **BALANCED HEAT** will help them to sell more houses, faster . . . and at greater profit.

This means better quality, higher profit installations, with less competition, for American-Standard* dealers. The American-Standard Air Conditioning Division **BALANCED HEAT** promotion is pre-selling the nation's

leading builders on this important new idea through national magazine advertising and direct mail. The "Two Furnaces for the Price of One for Model Home Installations" offer gives you the ideal sales clincher. Contact your nearest American-Standard Air Conditioning Division distributor for complete details at once.



NATIONALLY ADVERTISED TO LEADING BUILDERS

Throughout the nation, the new American-Standard campaign with its special "2 Furnaces for the Price of 1" offer is exciting the interest of promotion-minded builders. Cash in on extra sales by contacting your local American-Standard distributor for his full support in selling your local builders!



* American-Standard and Standard are trademarks of American Radiator & Standard Sanitary Corporation.

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AIR CONDITIONING DIVISION

when time is money

Cost conscious plumbing and heating contractors rely on fast installing AMERIVENT double-wall gas vent pipe. They know that for approved venting of water heaters, furnaces, boilers and space or wall heaters, sturdy lightweight AMERIVENT installs quicker with less labor time.

No waste, cementing or cutting with AMERIVENT. That's why this complete line of snap-together pipe and fittings is first choice for residential and commercial gas venting applications. Contractors know too, that across the U. S. and Canada their local AMERIVENT jobber stands ready to supply their individual requirements.

If you would like to know more about AMERIVENT we invite you to write for a completely descriptive catalog. Address AMERIVENT, Dept. CR.

America's finest double-wall gas vent for residential and commercial use.

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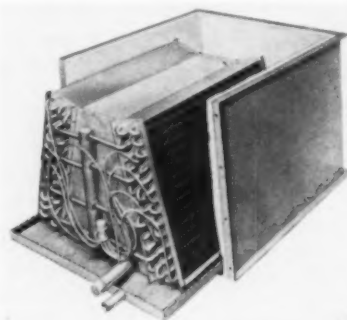
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equipment developments

(Continued)

Cooling Coils

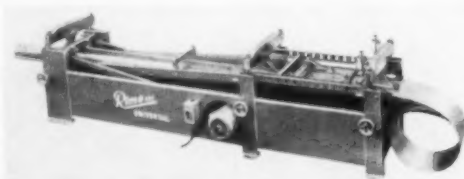
VERTICAL RESIDENTIAL cooling coils ranging from 26,000 to 90,000 Btuh with sliding removable coil section—McQuay, Inc., Dept. AA, 1600 Broadway, N.E., Minneapolis 13. Units are in five models, constructed



for upward or downward flow of air. Circuits are for use with refrigerant 12 or 22. Wide flanges and compact dimensions adapt unit to any warm air heating system, the company reports. Horizontal models from 25,800 to 92,100 Btuh are also available, designed for air flow in either direction.

Portable Gutter Machine

PORTABLE AUTOMATIC gutter machine which produces seamless gutters from flat metal strips of aluminum, copper, zinc or galvanized steel at rate of 6 to 7 fpm—Malden Research and Development Co., Inc., Dept.



AA, 1130 Main St., Malden, Boston 48, Mass. Unit, which weighs 650 lb and measures 9 ft × 2½ ft × 2½ ft, can be trailer-mounted. It forms any standard gutter type and size with interchangeable inserts. Length of gutter is limited only by length of stock. Finished gutter needs only to have ends closed and thimbles inserted for downspouts. Machine is shock resistant steel with ball bearing drawing carriage.

Air Makeup Unit

GAS-FIRED industrial air makeup units designed to temper and filter outside air entering ventilated areas—Aerovent Fan Co., Inc., Dept. AA, 740 E. Ash St.,

STAINLESS COSTS LESS THAN ALUMINUM—



Do you know that the
square-foot cost of

stainless steel sheet for curtain wall panels is usually equal to or lower than aluminum when compared in thicknesses of equal indentation resistance? For example, Type 302 stainless steel, .022" thick is equal to .051" aluminum and costs only 62¢ per sq. ft., as compared to 67¢ per sq. ft. for 3003-H14 anodized aluminum.

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all gauges, fill in and mail the coupon.

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Gentlemen:
Please send me full information on comparative costs of stainless steel vs. aluminum for curtain wall panels.

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equipment developments

(Continued)

Piqua 2, O. Units burn natural, mixed, manufactured and propane gases to supply sufficient volumes of preheated outdoor air to replace exhausted air, eliminating negative pressures or "vacuuming" and infiltration of cold air. Units are available in four-unit ar-

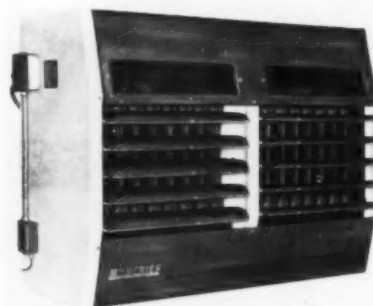


rangements in four sizes from 36 to 54 in. for various capacities, Btu ratings and pressure conditions. Direct fired burner and premixer maintains correct air-fuel ratios at all firing rates, assures uniformity of temperatures and quick response to changes in air inlet temperatures. Fan, burner and shutter operate automatically with safety switches to prevent premature

firing and accumulation of combustible fumes and gases. Controls prevent overheating and flame failure.

Gas-Fired Unit Heaters

"MONCRIEF" LINE of five direct-fired unit heaters which burn natural, manufactured, mixed or LP gases—*Henry Furnace Co., Dept. AA, Medina, O.* Capacities are 60,000, 90,000, 120,000, 180,000 and 240,000 Btu input. Steel burner head is tapered to deliver fuel



mixture to entire length of stainless steel ribbon burners at same pressure. Fan pitch and speed are engineered for quiet operation. Tapered casing is designed to harmonize with any room design and color.

MOLDED HUMIDIFIER PAN DEFIES CORROSION

TOUGH! Resists chipping, cracking and small pin holes which lead to corrosion. $\frac{1}{8}$ " thick—won't distort from heat.

EXCLUSIVE LIFETIME FEATURE OF GENERAL "800" HUMIDIFIERS



SPECIAL PHENOLIC COMPOUND

Developed for parts continually exposed to heat and water, this specially formulated phenolic compound is tougher than steel, needs no porcelain enamel coating—can't chip!

ABSOLUTELY CORROSION-PROOF!
Withstands strong acids and alkalis.

No doubt about it . . . here is the first LIFETIME humidifier pan. Molded from a tough, heat-and-water-resistant compound, the new General pan absolutely will not rust, pit

or corrode as conventional metal pans often do. Stronger, more rigid and easier to clean, this new pan is adding exclusive new trouble-free features to the General "800".

GENERAL FILTERS, INC.

1000 GRAND RIVER AVENUE • NOVI, MICHIGAN

Correspondence, General Filters, Inc., 20 Eastland Blvd., Southfield, Michigan

DO THE JOB RIGHT. When you sell a General Humidifier recommend a General Filter. Customers need both.



PARKER-KALON DIVISION, General American Transportation Corporation, Clifton, New Jersey

For the first time in fastener history—Parker-Kalon introduces Self-tapping screws **THREADED FULL TO THE HEAD** . . . **THE LAST THREAD ACTUALLY TERMINATING IN AN ANNULAR ORIFICE IN THE HEAD ITSELF** . . . the new P-K "Hi-thred" fastener!

It's a completely new idea in fasteners—a screw that reduces annoying and costly slow-downs—holds securely *without spinning or slipping*—even in very thin gage metal sheets.

PARKER-KALON® "Hi-thred" Self-tapping Screws



Pat. Pending

Compare the new P-K® "Hi-thred" with any conventional fastener. See for yourself the incomplete last thread on ordinary screws. Then see how the revolutionary P-K "Hi-thred" is constructed to give you firm, dependable fastening right to the head of the screw.

You can obtain samples from your nearby Industrial Supply Distributor, or write direct to P-K. "Hi-thred" fasteners are available in Types "A" and "Z" in production quantities in non-countersunk head styles.

Look...it's threaded right into the head!



Another new fastener idea from Parker-Kalon

Directed Air Flow



No. 60A—Bars may be set to direct air flow up or to both sides.

- Register faces of the famous "Fabrikated" construction excel in rigidity, open area and attractive appearance. When valves are set in correct position, an adjusting screw permits directing the air flow to the outside wall.



These floor registers are made in six standard sizes to fit openings from 4 x 10 to 6 x 14 with free air areas of 29 to 62 square inches. All sizes fully comply with code requirements of N.W.A.H. and A.C.A.

Write for complete catalog

Always Leading — Always Progressing

*Reg. U. S. Pat. Off.

**THE INDEPENDENT
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equipment developments

(Continued)

Humidifier Pan

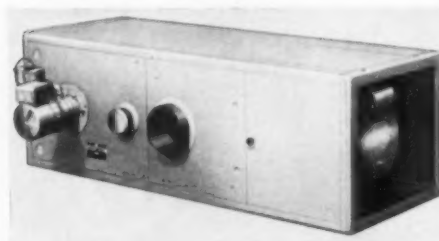
MOLDED HUMIDIFIER pan designed to lengthen life of series 800 furnace humidifiers—General Filters, Inc., Dept. AA, 43800 Grand River Ave., Novi, Mich. Molded from phenolic compound, unit is rust and corrosion resistant, and will not chip, crack or develop



pinholes through contact with water and heat, the company states. Pan is said to withstand high temperatures and will not burn, react to sulphuric acid and sodium hydroxide or corrode from electrolysis. No protective surface is necessary; unit can be cleaned without injury.

Gas-Fired Furnaces

"SHAFCONAIRE" gas-fired furnaces for commercial applications in three models rated at 142,000, 182,000 and 252,000 Btu—OverHead Heaters, Inc., Dept. AA, 1612 Book Bldg., Detroit 26. Featured is power burner



which provides close control of combustion gases through heat exchanger. Furnaces can be adapted for right or left hand installation. All models are complete with controls, power burner and blower, with or without filters.

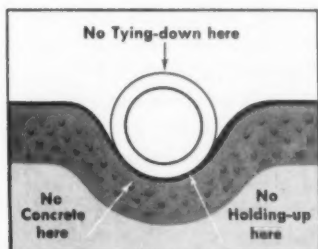
Air Mixing Unit

MODEL CV DOUBLE duct air mixing unit with self-contained constant volume control—Barber-Colman Co., Dept. AA, 1606 Rock St., Rockford, Ill. Unit is said to deliver constant cfm while mixing hot and cold high velocity air and reduce it to conventional velocities at low noise level. Available in octopus, open end and in-



Transite Air Duct keeps installed costs low!

Strong! Corrosion-resistant! Transite lets you eliminate costly concrete encasement



Transite® offers you many advantages—many ways to save when you install modern slab-in-grade perimeter heating and air-conditioning systems.

Of all its money-saving advantages, many contractors say its strength and corrosion resistance are most important, because they make costly concrete encasement unnecessary. Both time and concrete are saved as your men position Transite directly on the prepared bottom. There's no need for special supports—and because Transite won't float—no need for anchoring.

All your men do is position duct and pour concrete.

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To homeowners, Transite Air Duct offers permanent, trouble-free service. Made of asbestos-cement, it is fully corrosion-resistant inside and out. It won't flake or flap down to impede air flow . . . will never rot or give off odor.

Let us send you a free copy of Transite Air Duct booklet, TR-144A. Address Johns-Manville, Box 14, New York 16, N. Y. In Canada, 565 Lakeshore Road East, Port Credit, Ont.



Johns-Manville TRANSITE AIR DUCT



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DIE-STAMPED MACHINE MADE

Precision engineered, die-formed, two-piece elbows reduce friction loss considerably . . . systems are far more efficient. Production line manufacturing reduces costs . . . elbows can be specified with guaranteed uniform size and performance.

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SHEET METAL CO., INC.

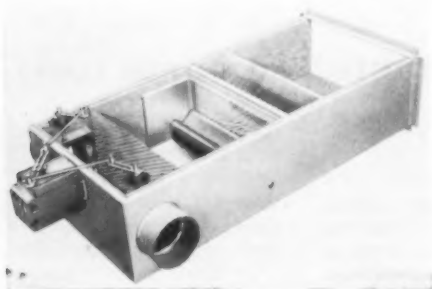
Representatives In Principal Cities In United States And Canada

540 SOUTH DREXEL AVENUE, COLUMBUS 9, OHIO

equipment developments

(Continued)

tegral diffuser types, unit can serve one or a series of diffusers. Temperature control and volume regulation are separate functions. Required cfm can be dialed



with single manual adjustment. Self-operated constant volume regulating valve is said to maintain constant cfm delivery with ± 5 percent for hot and cold air pressure differences up to 5:1. Hot and cold inlet control valves can be electrically or pneumatically operated.

Press Brake

"DI-ACRO HYDRA-POWER" press brake model 16-72, 25 ton, 6 ft bed hydraulically operated press brake with

adjustable stroke and dual speed operating cycle with power work stroke—O'neil-Irwin Mfg. Co., Dept. AA, 501 Eighth Ave., Lake City, Minn. Ram slows down under full pressure during work part of the stroke, then resumes high speed on return portion, eliminating whipping of sheet materials. Operator can pre-set ram stroke to narrowest possible opening for each job. Constant flow of power eliminates possibility of jamming, the company states. Relief valve can be set to apply tonnage required to bend or punch material of given size.

Oil-Fired Furnaces

"COMET 571" SERIES of oil-fired furnaces with combustion chambers of lightweight, unbreakable refractory fibers designed to absorb sound and insure low heat conductivity—Thatcher Furnace Co., Dept. AA, Centre St., Garwood, N.J. Knockout is provided on each side with built-in filter rack for return air. Filter is removed through front access door. Cabinet is insulated with aluminum foil-faced glass fiber. Oil burner unit is integral part of furnace. Two adjustable air bands provide control of air-oil mixture.

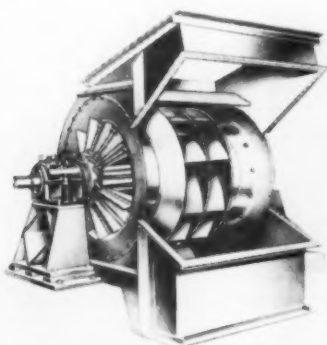
Heavy-Duty Fans

SERIES 4000 airfoil fans designed for mechanical draft and other heavy-duty applications—Westinghouse Stur-

equipment developments

(Continued)

tevant Div., Dept. T-234-AA, 200 Readville St., Hyde Park, Boston 36. Fans are available in 15 sizes with volumetric capacities from 10,000 to 700,000 cfm and



pressures up to 45 in. water. Units operate in extreme temperatures. Units may be used as forced-draft fans for combustion air supply with open inlets, with inlet boxes to handle pre-heated air, industrial exhaust systems and other applications.

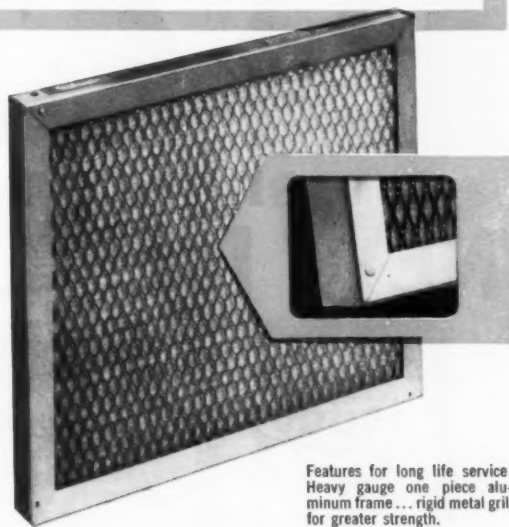
Heating, Cooling Equipment

"AIRTROL" LINE of year 'round air conditioning equipment with complete air control for both heating and air conditioning—Holly-General Co., Div. of Siegler Corp., Dept. AA, P. O. Box 2098-D, Pasadena, Calif. Heating unit is factory-assembled for installation. For summer air conditioning, installer removes jumper plug from junction box in furnace and plugs in a relay box which automatically selects correct blower speeds for heating or cooling. "Dual-air freeways" bypass heating elements to deliver extra air required for cooling. Blower has extra large opening designed for unrestricted and even flow of air over cooling coil and heat exchangers. Blower wheel and motor are mounted on rubber. Cooling coil is attached to furnace, air cooled compressor can be installed outside building. Furnaces, in 80,000, 100,000, 120,000 and 140,000 Btu sizes are designed for use with 2 to 5 ton air conditioners. "Duotrol" furnaces for heating only are available in 70,000 to 100,000 Btu sizes, in counterflow and horizontal models.

Arc Welder

"POWRWELD" ARC WELDER which provides d-c welding current with a-c power, at the same time drawing a-c power for lights and tools—Hobart Bros. Co., Dept. AA, Hobart Sq., Troy, O. Unit has welding range of 30 to 225 amp for intermittent use, and will handle all types of electrodes in all positions, the company reports.

**You make more profit
per filter sale with
Skuttle-Aire
permanent filters!**



Features for long life service:
Heavy gauge one piece aluminum frame... rigid metal grill for greater strength.

**Here are the reasons why
you get more with Skuttle-Aire:**

because they're permanent... built for lifetime wear.

because they're cleaned in a jiffy when dust and dirt particles gather, simply remove, clean with plain water and replace... that's all there is to it.

because they're maintenance-free... nothing to wear or replace, never need oiling.

because they're filled with new-type filtering material... multiple layers of specially woven plastic filaments with permanent electrostatic qualities, making it the ideal dust and dirt collecting agent.

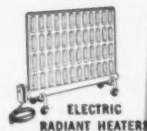
SKUTTLE-AIRE permanent filters are available in all sizes for furnaces, central air conditioning systems and room coolers.

Write today for complete information on Skuttle's quality products that give you more profitable sales.

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RADIANT HEATERS



HUMIDIFIERS



PERMANENT FILTERS

DURO DYNE

announces NEW INSULATION ADHESIVE IA-22



Coverage:

Brush Application - 230 + sq. ft. per gallon

Roller Application - 270 + sq. ft. per gallon

Temperature Range:

- 30°F to 325 + °F (Blanket)

- 30°F to 250 + °F (Board)

At last! A specific use adhesive designed for a quick, strong, permanent bond of insulation to sheet metal.

Duro-Dyne's new Insulation Adhesive IA-22 was created for bonding insulation to metal; insulation to insulation (at joints); sealing joints; "Buttering" insulation edges. Designed for glass-fiber, asbestos and cork insulation, etc.

Tack time is only 10 seconds! This means the bond is immediate and positive. What's more, long "open time" range permits bond one hour or longer after application of adhesive. Permits rapid coating of duct surfaces and provides positive bond of heavy insulating materials without auxiliary holding devices.

Duro-Dyne Adhesive IA-22 is water proof, clear in color, solvent in petroleum-naphtha or white gas. Requires no thinning. For full details, write today.

The Greatest Name in Sheet Metal Specialties



DURO-DYNE CORP., Route 110, Farmingdale, New York

equipment developments (Continued)

Heating, Cooling Units

LINE OF GAS-FIRED furnaces and year 'round air conditioning combinations—*Chattanooga Royal Co., Dept. AA, First and Delmar Sts., Chattanooga 6, Tenn.* Furnaces include 11 horizontal models from 80,-



000 to 120,000 Btu input with belt or direct drive blowers and permanent filters; 15 highboy units from 80,000 to 160,000 Btu; and nine counterflow models rated from 80,000 to 120,000 Btuh. Smallest models accommodate 3 tons of air conditioning or 1200 cfm; 120,000 Btu models provide 2000 cfm to accommodate 5 tons of air conditioning. Air conditioning line includes 2, 3 and 5 ton systems with horizontal or vertical evaporator coils for any forced air furnace, or in self-contained models. Ceiling-mounted 2, 3 and 5 ton commercial type systems are also available.

Ventilator Fans

"FAN-PAC" LINE of package ventilating units designed to exhaust air from enclosed rooms, machines, vats etc.—*General Blower Co., Dept. AA, 8600 Ferris Ave., Morton Grove, Ill.* Units are available in 8 direct drive models or 2 belt driven types. Direct drive fans deliver up to 2290 cfm; belt driven models move 1800 cfm. All fans have weather-resistant, light acid-resistant zinc chromate primer, the company states.

equipment developments

(Continued)

Unit Heaters

"LUXAIRE" DIRECT-fired gas unit heaters in five sizes with capacities of 60,000, 90,000, 120,000, 180,000 and 240,000 Btu input—*C. A. Olsen Mfg. Co., Dept. AA, Filbert St., Ely-*



ria, O. Smaller sizes have single heating element and blower; two larger units have twin heating elements and twin fans in same cabinet. Stainless steel ribbon burners are inserted into tapered steel burner heads. Finish is two tone charcoal.

Single Phase Motors

SINGLE PHASE MOTORS for fan drives ranging from 1/3 to 3 hp—*A. O. Smith Corp., Electric Motor Div., Dept. AA, 531 N. 4th St., Tipp City, O.* Motors in the 115/230-v size are available in 1/3 through 1½ hp ratings; 230-v sizes are in 2 and 3 hp ratings and in 1800 to 3600 rpm speeds. All models feature terminal boards and dual rotation (all fan duty motors are wound for rotation in either direction). Rotors are dynamically balanced; molded neoprene rings on bearing hubs isolate motor and fan from motor mount. All blower motors are available with automatic reset overload protectors.

Masking Material

"ON-2" MASKING material for stainless steel curtain wall panels and other fabricated parts—*Onco Products, Inc., Dept. AA, 201 S. Main*

DURO DYNE NEW DUCT TAPE



Now! An exclusive infra-red temperature curing process puts extra holding power into every inch of Duro-Dyne Tape.

Recognized as a positive, economical means of improving the quality of duct and insulation sealing jobs, Duro-Dyne Duct Tapes are specifically engineered to incorporate every feature required for perfect sealing jobs.

And . . . Duro-Dyne Duct Tape provides all these important features:

- **High Count Cloth**—Reinforced for greatest strength and durability.
- **Water Proof**—Tapes are plastic coated for resistance to water and moisture.
- **Super Strength Adhesive**—Assures immediate grab; lasting seal.
- **Wide Temperature Range**—32° F to 250° F.
- **Not Bulky**—Conforms neatly to irregular shapes.
- **Installs Easily**—Saves valuable installation time.

Your local Duro-Dyne Distributor will give you a complete demonstration quickly. Call him today. Or write for detailed information.

The greatest name in sheet metal specialties



DURO-DYNE CORP., Route 110, Farmingdale, New York

equipment developments

(Continued)

St., Middletown, O. Designed to protect stainless steel surfaces from damage by handling, fabricating, shipping, storage, and exposure, the material is a laminate of plastic film, aluminum foil, neutral ph kraft and water base pressure-sensitive adhesive. Adhesive residue weathers or washes off. Material is said to cling smoothly and firmly without setting or aging.



Return Air Grille

FILTER GRILLE for return air openings in residential and commercial applications, sized to comply with engineering standards on free air

area and filter area—*Central Mfg. Co., Dept. AA, 1420 N. Rice Ave., Bellaire Tex.* Grille is designed so home owner can change filters without use of tools. Unit is also designed to help dealer-contractor solve sizing problems and save installation time, according to the manufacturer.

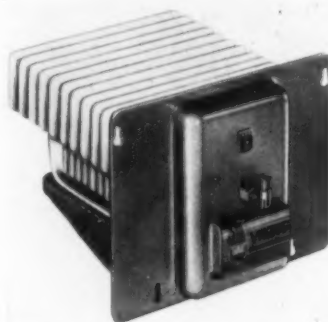
Nibbler, Drill

"TRU-EDGE Metlmastr" sheet metal nibbler and forming machine, and "Demco" drill—*Lennox Tool and Machine Builders, Dept. AA, Lima, O.* "Metlmastr" is designed for square shearing, circle shearing (up to 49 in. dia. inside throat) and free-hand contour shearing up to 9/32 in. metal thickness. Inside cuts can be made without starting hole. It is available in three sizes. Drills are in one, two, three, four and six spindle units. Multi-spline spindle can't drop of its own weight. Wear is confined to ball bearings housed in dustproof quill. Side motion is eliminated, the company states. Capacities are 1 in. in cast iron and 5/8 in. in mild steel.

General specifications include 12 in. center distance, 7 in. spindle travel, 17 in. table travel.

Furnace Humidifier

MODEL 6000 FURNACE humidifier with "lifetime" nylon valve designed to withstand water wear and corro-



sion—*Viking Air Products, Dept. AA, 5601 Walworth Ave., Cleveland 2.* Other features are glass pan, unbreakable evaporator plates, expanded plate capacity, 10 ft of poly-

Another

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SCOOPI-RAIL

ELIMINATES

- Radius ell, transition, and splitter damper at branch duct take-offs.
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SCOOPI RAIL, most economical method devised for fabricating precision, adjustable air scoops for branch ducts and grille collars insuring uniform air distribution across branch duct or over entire face of grille. 50 speed nut tabs for 3/8" square rod in each carton.

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You can now solder aluminum as easily and effectively as any of the common metals—using ordinary soldering procedures and ordinary 40-60, 50-50, 60-40 and 95-5 solders. LA-CO Aluminum Flux makes all the difference—brings formerly difficult aluminum fabrication within the scope of the average workman. This flux is completely acid-free. Packed in 4 oz. and 1 lb. tins for shop use, larger sizes for production work.

Write on company letterhead for sample; state details pertaining to your specific soldering problem.



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the quality tells ...
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new **JANITROL**

GAS-FIRED

winter air conditioners



featuring

famous JANITROL

Multi-Thermex

Heating Heart



*Janitrol presents...furnaces of the future
...ready now to help you sell and grow!*

all new **JANITROL**
Series FVS gas-fired
WINTER AIR-CONDITIONERS

FVS Winter Air Conditioner with trim, two tone cabinet, is completely accessible from the front.

Loaded with exclusive features no other line in the industry can match...yet priced competitively for volume sales!

The brand of winter air conditioning you choose to sell is vitally important to your income, your future security, your business growth. So it pays to choose wisely, and align yourself with the brand that gives you the most to tell, the most to sell. In winter conditioners, that means Janitrol. A look at the brilliant all-new 1958 FVS Series Conditioners for all gases tells you why in a hurry. Never before in heating history has *any* furnace offered so much to help your business grow and profit!

Convertible for full-performance cooling at minimum cost!

In this brilliant new Janitrol FVS Conditioner Series, the standard blower size is adequate for cooling in most installations! A damper changeover kit is available to convert rear air deflector from fixed to movable type, and allow cooling air to bypass the heat exchanger.

There's a quality-built **JANITROL** gas-fired winter air conditioner for every need!

Janitrol Horizontal Conditioners



Compact, horizontal forced air winter conditioner may be located in basement, crawl space or attic. Also approved for use as unit heaters. Thermostat and automatic controls included. Accessory filter assembly. Natural, mixed or LP gases. 65,000 to 150,000 Btu input.

controls included. Accessory filter assembly. Natural, mixed or LP gases. 65,000 to 150,000 Btu input.

Janitrol Counterflow Conditioners



Especially designed for basementless homes. Air-jacketed construction for safe zero clearance installation back and sides. Approved for installation directly on combustible floors without the use of special protective accessories. Full front access. Thermostat, automatic controls and filter included.

Natural, mixed or LP gases. Easily convertible for cooling. 80,000, 100,000 and 120,000 Btu.



The Look of the Future! New slim-trim styling . . . clean, uncluttered, compact. New warm-tone neutral colors to complement the decor of any room, harmonize with other appliances throughout the house.

The crisp, rectangular design and flush front enhance the built-in effect. There are no humps or bulges to waste valuable floor space. Here is simplicity and richness . . . beauty to be lived with and admired.

New Low Overall Cabinet Heights. Only 54 inches for 65,000 to 120,000 BTU models. Only 56 inches for 140,000 through 200,000 BTU models. All models adaptable for High Boy or Low Boy installation at close clearances.

Fully Accessible from Front. All internal parts from blower to heat exchanger are easily reached, simply by removing front panels. Snap-lock panel design. No screws.

All Models through 160,000 BTU Factory Assembled and Wired. Save time and labor on the job.

Matching Outlet Plenum (Optional). Knockouts on front and both sides for use when cutting opening for horizontal duct take-off. Insulated so cooling coil can be added later.

New Quietness in Operation. Acoustically treated blower chamber, cushion-mounted blower and blower motor, full-floating heat exchanger and air-cooled side panels provide a new concept of quiet operation, without annoying vibration and expansion-contraction noises.

Pre-lubricated Blower Bearings. Randall, "Deep Well Reservoir" sintered bronze type. Without equal for quiet operation and freedom from effects of maintenance neglect. Lubricant supply renewable through drilled and tapped hole made to take a small, collapsible tube of lubricant.

New Dirt-light Base Plate with Leveling Bolts. Assure easy installation, with no grouting necessary. Knockouts for inlet opening in base plate when making a High Boy type installation; also in both side panels.

Multi-Thermex Heat Exchanger. Warranted for 10 years. Welded assembly of 18-gauge tubes and 16-gauge top and bottom tube sheets. Horizontal corrugations in vertical tubes provide 50% more heating surface, maximum heating efficiency. Famous Janitrol Ampli-fire ribbon flame burners, removable in seconds for inspection, or when necessary when changing type of gas . . . no fasteners are used or tools required.

Seven Sizes 65,000 to 200,000 BTU per hour input. FVS 65-85, FVS 80-85, FVS 100-85, FVS 120-85, FVS 140-85, FVS 160-85 and FVS 200-85. All sizes AGA approved against 0.5" W. C. system static to meet new code requirements for units convertible to cooling. Full range of models. AGA approved as "Unit Heaters for non-residential space heating".

JANITROL HEATING AND AIR CONDITIONING DIVISION
Surface Combustion Corporation, Columbus 16, Ohio
In Canada: Moffats Ltd., Toronto 15.

Please show me how I can sell and grow with the new JANITROL FVS Series and other quality-built Janitrol winter conditioners.

NAME _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

Fill in and MAIL TODAY! No obligation.

Sell and Grow with ...

JANITROL

Ask your Janitrol representative for all the facts, or SEND COUPON TO US TODAY

From Janitrol—a complete line of gas and oil furnaces, unit heaters, conversion burners, air-cooled summer cooling conditioners, combination heating-cooling conditioners.



*It's open season
on new
construction business . . .*

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A good nose for construction news is a big asset to any contractor. But you can't hope to corner all your prospects . . . just at the moment they're active . . . no matter how many doorbells you ring or how many rumors you chase.

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Send me the book "Dodge Reports—How To Use Them Effectively" and let me see some typical Dodge Reports for my area. I am interested in the markets checked below.

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☐ Engineering Projects (Heavy Construction)

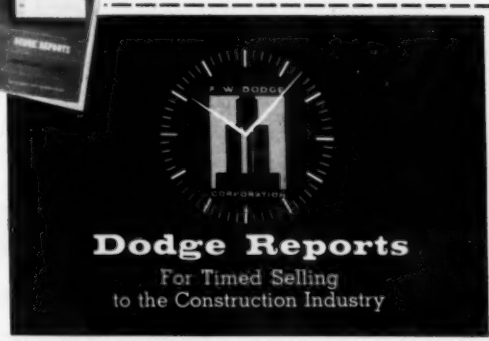
Area _____

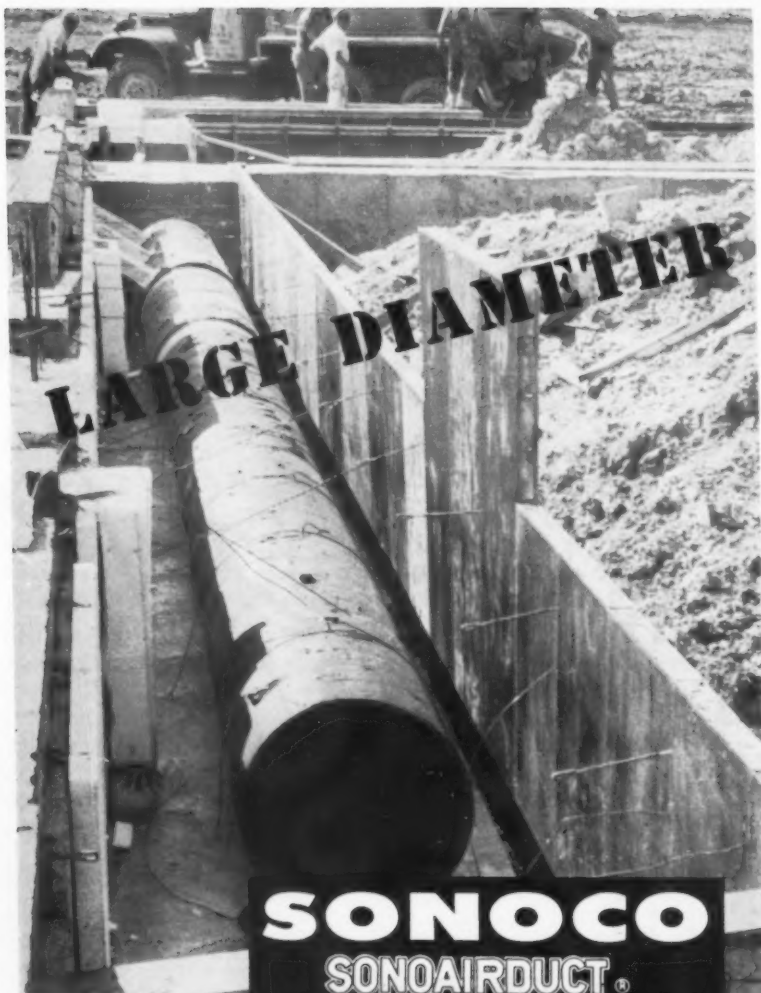
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Company _____

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City _____ Zone _____ State _____





SONOCO SONOAIRDUCT. FIBRE DUCT

Used now, more than ever before by cost conscious contractors

Economical SONOAIRDUCT in diameters ranging from 10" to 32" I.D., was installed as return air lines in the Kroger Distribution Center, St. Louis, Mo. This job is typical of hundreds where contractors must save on initial and installation costs, without lowering the quality of construction.

SONOAIRDUCT is made especially for slab perimeter heating or combination heating and cooling systems where duct is encased in concrete. Aluminum foil lined. Handles easily, levels quickly. 23 sizes, 2" to 36" I.D., in standard shipping lengths of 18'. Special lengths also available. Meets and exceeds F.H.A. criteria and test requirements for products in this category. Free installation manual available. See our catalog in Sweet's.

For complete information and prices, write—

- Hartsville, S. C.
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- Montclair, N. J.
- Akron, Indiana
- Longview, Texas
- Atlanta, Ga.
- Brantford, Ont.
- Mexico, D.F.

SONOCO
Construction Products
SONOCO PRODUCTS COMPANY

1873

122

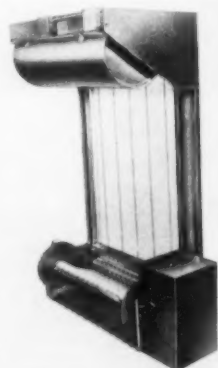
equipment developments

(Continued)

ethylene tubing. Unit holds up to 15 plates. Package includes tubing, five plates and hardware.

Renewable Media Filter

"ROLL-O-MATIC automatic renewable media air filter with reinforced media—American Air Filter Co., Inc., Dept. AA, 215 Central Ave., Louisville 8, Ky. Media retains its consistency and adhesion in extremes of temperature and humidity. Fea-

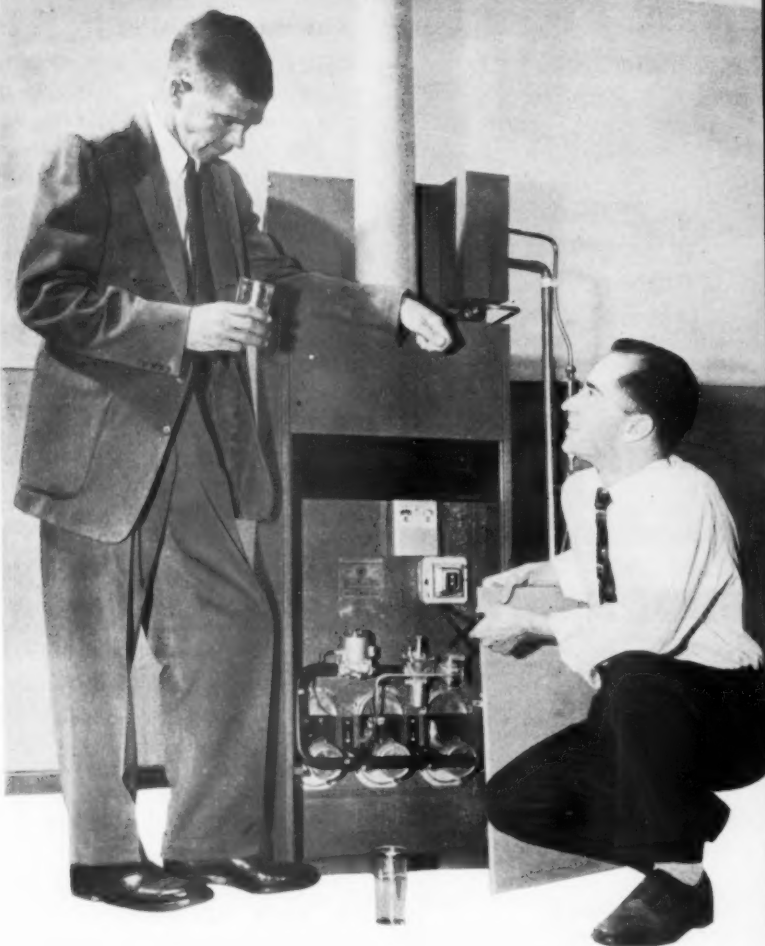


tures include: galvanized construction, media supports, improved drive on service side which will serve up to six units, maximum use of filter area, 12-months' supply of filter media. Unit is available in vertical sections of 3, 4 and 5 ft widths and 5 to 15 ft heights, in 4 in. increments. Roll of 65 lineal feet is compressed but returns to 2 in. thickness when exposed to air stream. Used media is collected on spool.

Oil Burners

MODELS 150F and 150SF-2 oil burners, previously furnished only with flange mounting, now available with pedestal mounting as well—The Carlin Co., Dept. AA, 912 Silas Deane Highway, Wethersfield 9, Conn. Pedestal mount has two burner-leveling screws in base; burner itself may be adjusted over 3 in. range from 8 in. to 11 in. Model 150F has firing range from 0.65 to 2 gph;

**What he says next
could make you glad**



The proud host shows the curious guest the air conditioning furnace you sold him. Here's where sales are often made or lost forever. Will the host say: "Plenty of heat in every room . . . can't even hear it . . . low cost performance . . . no mechanical trouble . . . house stays clean . . . and you can add cooling later"?

If so, you should be glad you sold him FRASER-JOHNSTON equipment. You may have another customer in the morning. If you *didn't* sell him FRASER-JOHNSTON, it might be well for you to get in touch with us right away — you could be missing a flock of profitable sales!

YOU SELL QUALITY

FRASER-JOHNSTON's basement, upflow, counterflow, and horizontal furnaces with matching coils and condensing units feature outstanding design, carefree operation, world's finest automatic controls, extra rugged construction.

COMPARE DESIGN with the VALUE LINE

- Requires minimum space
- Gives top heating efficiency
- High style blue-green crinkle finish
- Completely welded construction
- Fully automatic, fully guaranteed
- Basement, closet, attic or sub-floor installation
- American Gas Association and Underwriter Laboratories approved
- The QUIETEST air conditioning made
- Matching units permit add-on installation
- Factory-wired controls for easiest installation



Manufactured by

Fraser-Johnston

1900-17th STREET • SAN FRANCISCO, CALIF.

Over a Quarter Century of Leadership



SHEET METAL SHOPS CUT FABRICATION TIME AND COST... with Buffalo Universal Iron Worker

If you, too, are looking for a way to lower fabrication costs, consider the Buffalo Universal Iron Worker. Here is a machine which handles angles, tees, channels, bars and flats, performing the following operations:

SHEARING

PUNCHING

NOTCHING

COPING

MITERING

SLITTING

Two men may use this machine at the same time, as shown in the above illustration. In addition, this is the only machine made that has both notching and coping operations available without changing tools. Saves space, too, since this one machine does the work of six. If you want to reduce fabrication time and costs, phone your "Buffalo" machine tool dealer for full information on the Buffalo Universal Iron Worker. Or write for Bulletin 360-H.



BUFFALO FORGE COMPANY

205 MORTIMER STREET • BUFFALO, N. Y.

Buffalo Pumps Division, Buffalo, N. Y.

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

DRILLING

PUNCHING

SHEARING

BENDING

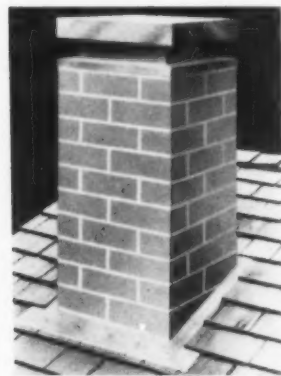
equipment developments

(Continued)

model 150SF-2 with "shell head" fires from 0.65 to 1.35 gph.

Chimney Housing

CHIMNEY HOUSING in brick or plain finish, in 3, 4 and 5 ft heights—*Metalbestos Div., William Wallace Co., Dept. AA, Belmont, Calif.* Housing is 16 in. square. Four galvanized



steel panels with slip lock edges are delivered flat. Two piece flashing and aluminized steel top complete the package. Red or buff brick or plain paintable finishes are available. Housings can be used with company's chimney or gas vents.

Tank Fill Signal

"WHISTLER" EXHAUST fill signal for oil storage tanks—*Applied Mechanics Co., Dept. AA, 381-389 Congress St., Boston 10.* Corrosion-protected unit fits into vent pipe inside tank. Signal is pitched to emit audible exhaust sound, is designed to minimize back pressure if tanks should be overfilled, according to the manufacturer.

Aluminum Solder

"AIRCO 720 Al-Solder Rod" made of alloy designed specifically for soldering aluminum—*Air Reduction Sales Co., Dept. AA, 150 E. 42nd St., New York 17.* Designed for variety of joining and filling applications, solder is said to provide good color match. It requires no flux, washing

*Handle the Heaters that offer
the most in
Comfort and Convenience*



5 sizes,
from
30,000 to
70,000 btu.,
A. G. A.
approved.
Choice of
2 baked
enamel
finishes.
For
natural,
manufac-
tured, or
LP gas.

Humphrey

GAS FIRED

RADIANTFIRE CIRCULATORS

There's prestige in handling Humphrey — today's top line in the gas heater field. There's satisfaction, too. Every time you sell one, you feel you've done a good job for the customer.

There's a solid profit for you on Humphrey heaters today, and the promise of a continuously expanding business in the years ahead.

Only Humphrey offers such exquisite styling — such superb engineering.

Only Humphrey provides such valuable service features as exclusive "Toptrol," "Directaire" Counterflow Fan, Full Width Radiants, Full Size Top Grill, etc. All contributing to make Humphrey heaters tops for comfort, convenience, and lasting good service.

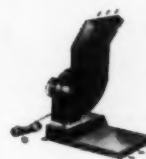
Why not decide now to join the family of prosperous, successful Humphrey dealers? Send for our literature today.

GENERAL GAS LIGHT COMPANY
KALAMAZOO, MICHIGAN



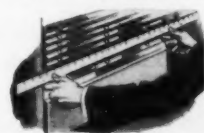
EXCLUSIVE "TOPTROL"

Dial heat wanted with this top knob — no stooping or squinting. As easy as operating a gas range.



"DIRECTAIRE" Counterflow Fan

Diverts up to 50% of warm air to floor level outlet, covering floor with a blanket of heat. Optional with all models.

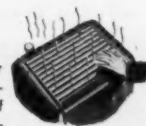


FULL WIDTH RADIANTS

Humphrey gives more radiant heat from larger, heavier radiants. Approved for either open or closed front operation. Pyrex front panels available.

FULL SIZE TOP GRILL

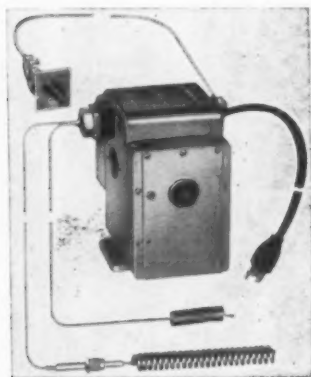
Has capacity for circulating larger volume of warm air — makes heater more efficient.



equipment developments

(Continued)

or brushing; pre-cleaning and post-cleaning are unnecessary. Solder is applied by rubbing across joints which have been heated. Melting and wetting occur 400 to 500 deg below melting point of aluminum at a temperature of 720 F.



Ventilator Controls

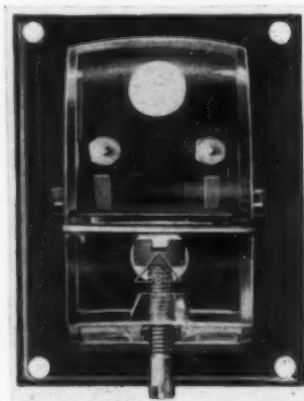
"DUAL ELEMENT Controller" electric package control system for face and

bypass unit ventilators—*Barber Colman Co., Dept. AA, 1606 Rock St., Rockford, Ill.* Unit consists of motor operator for damper control actuated by its own self-contained dual temperature sensing elements. Return spring assures positive closing of outdoor air damper when unit is shut down; damper mechanism is said to be accurately positioned at all times. Unit utilizes two coil type sensing elements, one for room air temperature and one for discharge air temperature. Controller is within housing, eliminating need for wall thermostat; its room air sensing element is mounted in sampling chamber. Package is designed for control of face and bypass type classroom unit ventilators used for ventilating and air conditioning applications.

Unit Heater

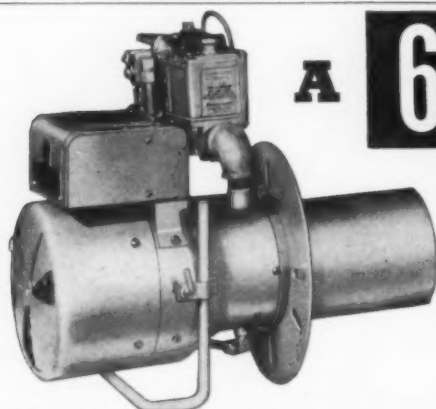
SERIES K gas-fired unit heater in 10 models ranging from 25,000 to 250,000 Btu—*John J. Nesbitt, Inc., Dept. AA, State Rd. & Rhawn St., Philadelphia 36.* Lighter in weight and

more compact than previous models, units feature controls located at outside rear for improved access, motors directly connected to propeller fan and elimination of starting switches. The 35,000 Btu model weighs 66 lb. All units are approved for use with all gases.



Filter Service Switch

MODEL MNE air filter service switch for operating warning light when filter needs replacing—*Bacharach In-*



A **6" FLAME**

at
**210,000
BTU'S**

The sooner a gas flame completes combustion, the hotter and more efficient it becomes.

THE NEW Barber TURBO-HEAT
Power Gas Burner produces a flame only 6" long at 210,000 BTU's. No other burner is as efficient as the TURBO-HEAT.

Combustion efficiency is the most important single element in a gas burner. With

TURBO-HEAT you can even convert difficult or troublesome heating plants into well heated homes at reduced fuel costs.

The secret of the "Hottest Flame" is described in Bulletin #PBS-4185. . . . Learn why the TURBO-HEAT is the lightest, most compact, easiest to wire and install gas burner ever produced. Write today for complete information and prices. Bulletin #PBS-4185.

THE

Barber

MANUFACTURING COMPANY
Dept. A, 1052 East 134th Street, Cleveland 10, Ohio

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Fast! Easy to handle!
Cut to a hairline!



SERIES G
(With Gap)



SERIES F

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FOOT SQUARING SHEARS

Put new profits into your work with modern foot shears that cut through sheet metal slick as a whistle! Combining rigidity, compactness and light weight, Niagara Foot Squaring Shears handle your cutting jobs with unrivaled ease, accuracy and speed.

Using the convenient, quick-setting, calibrated back and side gages, or the front gage, it's a cinch to line up work on the sturdy, all-welded steel bed. A rugged, one piece steel holddown grips the metal firmly, yet leaves the cutting line clearly visible.

You'll like the smooth action of the treadle. It's well-balanced, powerful, efficient. The rigid steel crosshead is accurately guided by adjustable, non-metallic ways. Sturdy, stable housings maintain alignment of working parts, accuracy of knife travel, and eliminate need for bolting to floor. Long-lasting Niagara knives maintain their keen cutting edge, assure maximum service.

Find out how Niagara Foot Squaring Shears can turn out better work at greater profits to you. Niagara offers you a complete line — Series F (22" - 120", 18 & 16 ga.) and Series G with 18" Gap (36" - 72", 16 ga.) — to meet light sheet metal requirements with ease... as well as the largest range of power shears in the industry. Write for new, illustrated Bulletin 80-FC today.



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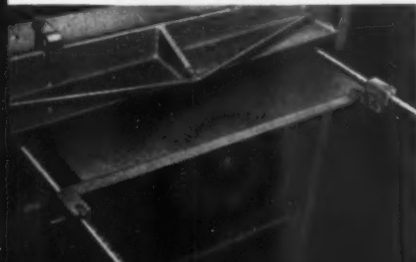
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CONVENIENT GAGES FOR EASY, ACCURATE ADJUSTING

Quick-setting and locking,
calibrated back gage

Ball bearing, self-measuring parallel
back gage on larger models

Adjustable, calibrated
side gages



NEW FROM MASTER-CRAFT



NEW LARGE CAPACITY SOOT MASTER FURNACE CLEANER

The engineering principles used to develop MODEL 581 have made furnace cleaning more economical than it has ever been before.

The THROWAWAY filter bag provides a safe easy method of soot disposal.

Lightweight, more powerful, new larger capacity container, larger filter area designed for lasting suction, plus new power cooling design make this machine quieter and easier to use than any other suction cleaner available. Protective rubber bumper around base.

FASTER, EASIER CLEANING THAN EVER BEFORE only \$127.50

Slightly higher in Canada and west of Rockies
COMPLETE WITH 27" CREVICE TOOL, UTILITY NOZ-
ZLE, 6' FLEXIBLE A-10AL HOSE, 10' DUCK COVERED
HOSE & 10 DISPOSABLE FILTERS.

Blower MODEL 581A available at slight extra
cost.
Send for literature. Jobber-Distributor inquiries
invited.

MC MASTER-CRAFT
SUPPLY CO., INC.
W. HAVERSTRAW, N. Y.
Manufacturers & Suppliers of Cleaning Equipment
Distributed in Canada by Imperial Refractories, Ltd.

equipment developments (Continued)

dustrial Instrument Co. Dept. AA,
200 N. Braddock Ave., Pittsburgh 8.
Designed for residential heating
and cooling systems, commercial
packaged air conditioners, room
units, unit ventilators and other cool-
ing and ventilating equipment, the
switch closes electrical circuit, acti-
vating filter warning light on thermo-
stat or wall. Unit is designed for con-
nection between filter and blower or
across filter using 1/2 in. i.d. hose.

Squirrel Cage Blowers

REDESIGNED LINE of 36 squirrel cage
furnace and air conditioner blowers
now made from hot dipped, zinc
coated sheets—Morrison Products,
Inc., Dept. AA, 16816 Waterloo Rd.,
Cleveland 10. Wheel rim diameters
range from 9 to 20 in.; blade lengths



are 6 through 20 in. Zinc-coated
sheets in gages from 0.0299 to 0.0598
in. are used in fabricating wheel
blades, rims and housing wrappers.
Blades are stamped, shaped and
gathered in unbroken strip from coils
of sheet metal, then cut to length and
welded to rims. Previous models were
produced from cold rolled sheet coils.

Elevating Tailgates

"WEIGHTLIFTER" elevating tailgates
for pickups, 3/4 and 2 ton trucks with
stake or van bodies—H. S. Watson
Co., Dept. AA, 1316 67th St., Emery-
ville 8, Calif. Electric-hydraulic unit
is in 1000, 1100, and 1300 lb capac-
ities.

NEW IMPROVED Fayette Portable Brake Bar Fold



*Saves you
time and money . . .*
**ELIMINATES NEEDLESS
TRIPS BETWEEN
SHOP and JOB**

The combination brake and bar easily
slips into the slotted stand. The stand
folds up to a convenient 36" x 24"
flat package, making it truly portable.

Design provides even pressure along
the entire 36" length of shoe using
sheets up to 20 gauge.

Sturdily built, Fayette will give you
many years of useful, money saving
service. Order today . . . start cutting
costs immediately.

MAKE UP . . .
CHANNELS
ANGLES
S AND
DRIVE CLIPS
SIDE RAILS
END CAPS



PITTSBURGH SEAM • WALL STACK, DUCT
AND OTHER PARTS AND FITTINGS

**DISTRIBUTOR • JOBBER
TERRITORIES AVAILABLE**
Write or Wire Today.

FAYETTE MFG. CO.
210 MAIN ST.
MORENCI, MICHIGAN

"fast spot heating"



DOWN-BLO
MODEL

Norman
Three-Sixty®

GAS-FIRED

UNIT HEATERS

answer more jobs better!

RADIAL-FLO
MODEL



"umbrella
of
comfort"

- Patented Sealed-Combustion System . . . 100% outside air for combustion . . . flue products expelled outside under pressure
- Inputs of 85,000 or 100,000 BTU/hr.
- American Gas Association approved

NOW YOU CAN
"OUT-SELL"
IN BOTH
THE HORIZONTAL
FURNACE AND
BLOWER-TYPE
UNIT HEATER
MARKETS



Norman Southerner®

NOW MORE COMPETITIVE THAN EVER

The Norman Southerner — today's leading horizontal furnace value — is yours to sell at competitive prices!

Norman Products Company was first to design and produce a compact, gas-fired horizontal furnace. Today the Southerner is the most advanced furnace of its kind . . . time-tested and performance-proved both as a unit heater and a central heating system.

Now Norman gives you the *competitive* prices that will open the way to greater sales volume . . . greater profit-opportunities.

- Completely assembled for fast, lower-cost installation
- Residential, commercial and industrial applications in new construction and modernization
- 10-Year Warranty
- Five sizes: 70-85-100-120-140 thousand BTU input
- Approved by A.G.A. for use as either **central heating system** or as blower-type unit heater with any type of gas. Also approved for attic installations.



Write us today for
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1164 Chesapeake Ave.
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PRODUCTS COMPANY

1164 CHESAPEAKE AVE.

COLUMBUS 12, OHIO



IN FASTENERS SOUTHERN IS plated

For plated screws that assure corrosion resistance and beauty, you can rely on Southern's better finishes in plated nickel, zinc, cadmium, brass, copper, statuary bronze, blued or black oxidized screws. All of these are finished in our own plant to rigid specifications. Chromium plated brass wood screws, machine screws and nuts, and hot galvanized steel wood screws are stocked in all popular sizes.

Southern's cadmium and zinc plated fasteners are treated for extra brightness and corrosion resistance with IRIDITE® chromate conversion coating. This also makes the screws suitable for painting without additional treatment.

Try Southern's quality plated screws. There are no better available—anywhere. Send your order or inquiry to Southern Screw Company, P. O. Box 1360, Statesville, North Carolina.

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new literature . . .

Merchandising Aids

BROCHURE illustrates and describes over 70 advertising and merchandising aids available to dealer-contractors. One section covers catalogs and specification sheets. Another illustrates dealer identification material including banners, streamers, job site signs, decals, service stickers, match books, literature racks, and indoor and outdoor signs. Other sections describe envelope stuffers, a 22 × 26 in. self-mailer/poster, booklets, folders, mailing cards, and radio and television commercials. Also being offered is a 20 page catalog containing proof sheets of a variety of newspaper mats in many sizes for winter, summer and year 'round air conditioning equipment. The book also contains proofs of mats specifically designed for builder advertising, as well as a number of mats for use by the dealer-contractor in preparing newspaper ads at the local level—*American Standard Air Conditioning Div., Dept. AA, 40 W. 40th St., New York.*

Gas Unit Heaters

FIVE "LUXAIRE" DIRECT FIRED gas unit heaters are described in Catalog No. 287 (four pages). Illustrations show complete units as well as components including louvers, fan motor supports, gas burners, and burner heads. Tables give ratings and specifications as well as overall dimensions—*The C. A. Olsen Mfg. Co., Dept. AA, Elyria, O.*

Sheet Metal Tools

BOOKLET contains information on tools such as a scissors jack die lift designed to provide easy, one-man handling of heavy dies, castings, etc.; a sheet feeder die lift; and magnetic sheet floaters said to make stacked sheets repel each other and fan out, thus making it possible to feed one sheet at a time into a machine with-

Sell Draft King Chimney Caps



**You make money . . .
Customers save money!**

The Perfect Cap for all Chimneys, Flues and Ventilators.

You'll do a volume business with Draft King when customers learn of its money-saving benefits.

Draft King turns flue gases into perfect heating combustion—eliminates chimney clogging soot and costly fuel waste. No moving parts—nothing to wear out. Made of either all-weather galvanized steel or aluminum.

Other DRAFT KING Customer Benefits:

- Wind, rain, snow and ice proof
- Eliminates damaging chimney fires
- Acts as a spark arrester
- Prevents pilot blowouts
- Easy to install
- Improves appearance of chimney
- Priced under competitive makes

<p>Stops ALL draft troubles!</p>	<p>SIDE DRAFTS</p>
<p>UP DRAFTS</p>	<p>DOWN DRAFTS</p>
<p>Manufactured by A. R. WOOD MFG. CO. Luverne, Minnesota</p>	

US Offers the Most

AT LOWEST COMPETITIVE PRICES
THE NO. 2500 U.S. STEPPED DOWN AND NO. 2501
FLUSH-TYPE SQUARE CEILING DIFFUSERS-DAMPER AND FRAMES



The No. 2501 FLUSH-TYPE SQUARE CEILING DIFFUSER is of Same Sectional Structure and Same Deep ANTI-SMUDGE OUTER SECTION as the No. 2500 except that the Sections of the No. 2501 are on the SAME PLANE — NOT STEPPED DOWN.



TO INSTALL: Set in opening and attach. Remove Knob. Attach Diffuser. Replace Knob for Knob Operation — or discard Knob for SCREW-DRIVER OPERATION.

NOS. 2500 and 2501 ARE NOW READY FOR SHIPMENT

NOTE: the WIDE, DEEP OUTER ANTI-SMUDGE SECTION. This Protects the Ceilings against Soilage. The Air Stream is Diverted Sufficiently Downward to Clear the Ceiling and yet Create PERFECT DIFFUSION.

STANDARD FINISH — ART BUFF (prime coat).

All No. 2500 CEILING DIFFUSERS are Equipped with the Finest Rubber Sealing Gaskets Properly attached to the Outer Rim of ANTI-SMUDGE Section which creates a POSITIVE SEAL against CEILING STREAKAGE.

The Hole in the Center Section Permits SCREW-DRIVER ADJUSTMENT with Tamper-Proof Balancing. Attachable Knob for Convenient Operation. Center Slotted for Ball Chain to pull Square or Round Damper which would be furnished by others. DAMPERS for No. 2500 are KNOB or SCREW-DRIVER OPERATED.



The No. 2500 and No. 2501 SQUARE DIFFUSERS PRESENT the MOST VERSATILE and EFFICIENT of all Bi-Valve DAMPERS. KNOB Operation affords Hand Adjustment. SCREW-DRIVER Operation provides Unmolestable Setting. In this case Knob is not needed.



WRITE FOR OUR COMPLETE



NEW CEILING DIFFUSER FOLDER



UNITED STATES

REGISTER COMPANY

BATTLE CREEK,

MICHIGAN

MINNEAPOLIS • KANSAS CITY • ALBANY

NEW NARROW LOOK 100,000 BTU Counterflow Furnace 14" Wide

by **Western**
tuck·aire



CFD-14

DESIGNED FOR PERIMETER
HEATING AGA COMBUSTIBLE
FLOOR APPROVAL

- **COMPACT**—Narrowest counterflow gas furnace available in 100,000 BTU range. 14" wide, 28" deep, 70½" high.
- **RANGE OF SIZES**—60,000 to 100,000 BTU... 7 sizes.
- **SINGLE POINT SUSPENSION** of heat exchangers eliminates "expansion noises," metal fatigue and exchanger breakdown.
- **EASY TO SERVICE**—Utility connections, either side—slide-out blower—Filters easily removed without removing vent.

Write Today for Complete Specifications

tuck·aire
FURNACE COMPANY

2045 Evans Avenue • San Francisco, California

new literature

(Continued)

out scratching surfaces or cutting hands. Also included is information on inspection tools such as surface roughness gages, machinists' steel squares, and four-way drill point gages. Ask for "92 Time Savers for Tool Makers"—*Montgomery & Co., Inc., Dept. AA, 7 Tichenor Lane, Newark 2, N. J.*

Power Roof Exhausters

"SUPER AIR-VAN" power roof exhausters with glass fiber housings are described in a six page illustrated brochure. According to the company, the housings are light in weight, are corrosion resistant and weatherproof, and never require painting. Included are rating tables, dimensional data, and a typical specification—*The Galaher Co., Dept. AA, 4108 Dodge St., Omaha 31.*

Condensing Units

BROCHURE describes "Blu-Cold" open type condensing units for high temperature applications. Capacities and specifications are given for air cooled, water cooled, and combination air and water cooled units. Air cooled units include models ranging from 13,400 to 32,000 Btuh; water cooled units, models from 19,700 to 98,000 Btuh; and combination units, models from 17,730 to 39,150 Btuh—*Lehigh Mfg. Co., Dept. AA, Easton, Pa.*

Asbestos-Cement Duct

ADVANTAGES of asbestos-cement air duct for heating, air conditioning and ventilating applications are explained in folder AP-18. Duct is available in 4, 6, 8, 10 and 12 in. diameters. According to the manufacturer, light weight of the duct makes it easy to handle and install standard 13 ft lengths. Standard lengths may be cut to fit on the job, eliminating short lengths and leftovers—*Keasbey & Mattison Co., Dept. AA, Ambler, Pa.*

YOU are invited to read and use AMERICAN ARTISAN

You who are making your livelihood from warm air heating, residential air conditioning or sheet metal contracting can best use the practical helps published in *American Artisan* each month.

● Last year's record is evidence that the *Artisan* covers these subjects most thoroughly: 200 feature pages on Air Conditioning and Warm Air Heating; 125 pages on Sheet Metal Fabrication and Contracting; 165 pages on Management Methods. That's 490 pages—in addition to useful departments such as Questions & Answers, New Products, Trade Literature, Association Activities, etc.

● You will get in the *Artisan* vital information and practical "know-how" of dollars-and-cents value to your business. It points the way toward better methods, lower costs, and improvements in merchandising and contracting procedures, also correct practices in design, fabrication, installation, and servicing.

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Business

MEMO TO MEN
ON THE WAY UP



WHERE THERE'S BUSINESS ACTION THERE'S A BUSINESSPAPER

Used to be a song, back in the Thirties, titled, *Little Man, You've Had a Busy Day*. Didn't mention the Big Man. But his days are busy, too. He's the man who must make top-level decisions in business. And to make those decisions, he must have facts. All the facts. All the pertinent information he can get.

He finds time, in his busy days, to get that information. How? By getting a major portion of it from one unique source: the business publications serving his particular field.

No businessman, Little or Big, is fully informed until he reads his businesspaper. He reads it for profit, not for

pleasure. He searches it through for news of the trade or industry. For facts. For fresh ideas. For new products he can put to work. And he reads the advertising with the same intense concentration he devotes to the editorial pages.

For the man on his way toward becoming a Big Man, his businesspaper is especially important. Take a tip from the reading habits of key men at every level. Take out a subscription of your own. Then, make the time to read every issue—and read it thoroughly.

American Artisan

"TI-CO's tight zinc coating saves us time and money"

says Frank Marino



"Flaking used to be a problem with the old pot-dipped sheets. Jobs often had to be re-run and that costs money. With TI-CO there's no flaking . . . the zinc coating stays on . . . even in the Pittsburgh lock-seamer."

—Frank Marino, Shop Foreman
McGrath Heating &
Air Conditioning, Inc.
Chicago, Illinois

Ask your distributor for the TI-CO
Brand . . . the galvanized sheet
tailor-made for sheet metal work .



INLAND STEEL COMPANY

30 W. Monroe St., Chicago 3, Illinois

new literature

(Continued)

Residential and Commercial Furnaces

DATA SHEET covers residential horizontal forced air furnaces for installation in attic, crawl space or ceiling. Furnaces are available in five sizes with input capacities ranging from 60,000 to 140,000 Btuh, are AGA approved for use with natural, mixed, manufactured and LP gases. Also available is a circular covering gas or oil horizontal furnaces for installation in stores, service stations, garages or factories. Unit is shipped completely assembled and ready for installation. A humidifier for duct installation is available if desired—*The Majestic Co., Inc., Dept. AA, 733 Erie St., Huntington, Ind.*

Oil Fired Hot Water Heaters

FULL COLOR DATA SHEET (No. 3460) describes and illustrates direct oil-fired hot water heaters for residential and commercial applications. Three models, all with 30 gal reserve tanks, are available to heat 135, 200 or 270 gph. Specifications and a construction diagram are included—*Petro, Dept. AA, 3170 W. 106th St., Cleveland 11.*

Air Conditioning Vibration Hangers

BULLETIN RH-10 features "RH" neoprene-in-shear hangers especially designed to provide isolation for piping and suspended equipment used in air conditioning installations. Hangers are available in four sizes, are color-coded by capacity to avoid errors and simplify installation. Capacities range from 10 to 3000 lb per hanger. Tables provide technical dimensional data and load ranges to aid in selection—*Vibration Mountings, Inc., Dept. AA, 98-15 50 Ave., Corona 68, N. Y.*

Ventilating Fans, Range Hoods

VENTILATING FANS and range hoods are described in bulletin 237-L. Fans include ceiling, wall and multi-position types. The multi-position model features an adapter which permits the fan to be installed in either a horizontal or vertical position, depending on installation requirements. Range hoods are available in three styles, are offered in stainless steel, antique copper, or coppertone enamel finish—*Leigh Building Products, Div. of Air Control Products, Inc., Dept. AA, Coopersville, Mich.*

Centrifugal Fans, Roof Ventilators

BULLETIN 257-S gives data on four airfoil type centrifugal fans for hospitals, office buildings, restaurants, etc. Information is given on speed control of both direct-connected and belt-driven models. Construction

new literature

(Continued)

data, specifications and capacity tables are included. Also available is bulletin 2301-S covering power roof ventilators for supermarkets, schools and hospitals as well as industrial plants. Ventilator silhouette is low, is designed to harmonize with modern architecture—Ilg Electric Ventilating Co., Dept. AA, 2850 N. Pulaski Rd., Chicago 41.

Gas Fired Unit Heaters

CATALOG No. 162 illustrates and describes five new "Moncrief" gas fired unit heaters. Included are dimensions, specifications and ratings—The Henry Furnace Co., Dept. AA, Medina, O.

Humidifier for Warm Air System

CIRCULAR covers "Climatizer" electric humidifiers for warm air heating systems. According to the company, the "Climatizer" evaporates water at a rate of 20 qt in 24 hr. An adjustable thermostat, controlled by a knob on the cover plate, permits home owner to regulate amount of humidity desired. Two models are available—model 250, wired to operate when blower is on, and model 251, wired with electric plug for continuous operation—The Keeney Mfg. Co., Dept. AA, Newington, Conn.

Oil-Fired Furnaces

DATA SHEET describes and illustrates "Comet 571" oil-fired winter air conditioners. Included is information on filters, insulation, blowers, combustion chamber and oil burner. Tables present engineering information and capacities. Line drawings show dimensions and component locations—Thatcher Furnace Co., Dept. AA, Centre St., Garwood, N. J.

Conversion Gas Burners

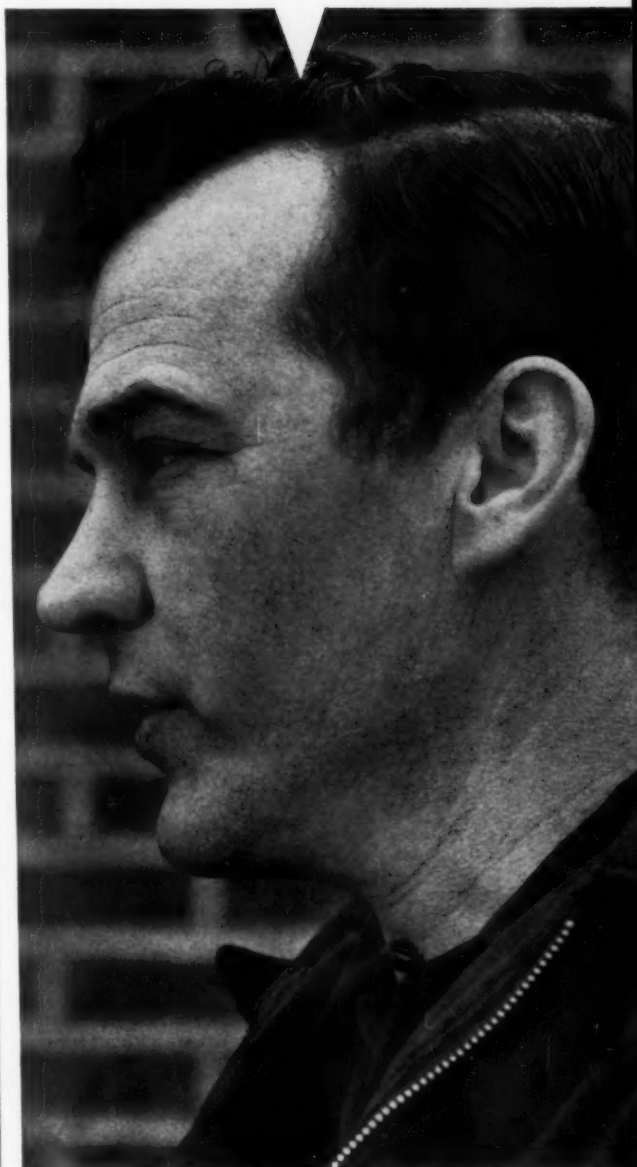
SIX PAGE ILLUSTRATED FOLDER (No. T-8019) describes conversion gas burners for residential furnaces. Included are dimensional drawings, cutaway views, specifications, ratings and text on design and installation features. Burners are adaptable for natural, mixed, manufactured and bottled gases, according to the company. Models range in input ratings from 50,000 to 300,000 Btuh—Timken Silent Automatic Products, Dept. AA, 3170 W. 106th St., Cleveland 11.

Diffusers, Registers and Grilles

SIXTY-FOUR PAGE MANUAL presents selection tables, performance charts and engineering data on multi-pattern square and rectangular air diffusers. A section on testing procedures explains how to calculate air volume

"Soldered joints are never a problem with INLAND TI-CO"

says Bob Schill



"We do quite a bit of soldering in our shop, but there's never any problem with Inland TI-CO. We get nice smooth joints that really hold. We like the dimension uniformity of TI-CO sheets too... they're always nice and square."

—Bob F. Schill, Partner
Rapids Sheet Metal Work
Wisconsin Rapids, Wisconsin

Ask your distributor for the TI-CO
Brand... the galvanized sheet
tailor-made for sheet metal work.



INLAND STEEL COMPANY

30 W. Monroe St., Chicago 3, Illinois

FOR your product line



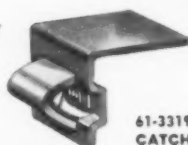
61-095A
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61-366
HANDLE

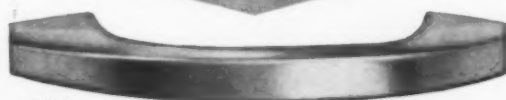


HEXAGON
POINTED BOLT




61-3319
CATCH

FROM 1 reliable source

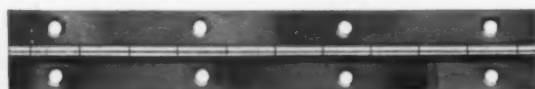


61-394
HANDLE

PRE-ASSEMBLED
KEYS 
Registered Trade Mark of
Illinois Tool Works



THREAD-CUTTING
SEMS



CONTINUOUS HINGES IN A VARIETY OF WING, MATERIAL,
HOLE, FINISH SPECIFICATIONS

NATIONAL LOCK STANDARD AND CUSTOM-BUILT HARDWARE SPECIAL-PURPOSE FASTENERS

FOR USE ON METAL CABINETS
OIL BURNERS • GAS HEATING UNITS
AIR CONDITIONING EQUIPMENT



Write for Complete Information
NATIONAL LOCK COMPANY
Rockford, Illinois

new literature

(Continued)

and determine effective areas. Included is information on acoustical ceiling installation. Also available is engineering manual No. 39 covering "Stream-Flow" registers and grilles. Illustrated are single and double deflection supply grilles and registers, return air registers, air extractors, volume controllers, door and partition grilles and opposed blade dampers. Selection tables, engineering data and price lists are included—*Universal Diffuser Corp., Dept. AA, 38 Marbledale Rd., Tuckahoe, N. Y.*

Duct Hangers

DUCT HANGERS designed to cut down installation time, reduce accidents, and save labor costs are described in a four page illustrated bulletin. Line drawings show 24 ways in which the hangers may be used. Typical applications include hanging a duct from a parallel joist and hanging one duct from another. According to the company, hangers may be used on all types of duct material — sheet metal, aluminum, asbestos, duct board, plywood, heavy paper, etc.—*A. M. Hexdall Co., Dept. AA, Morris, Ill.*

Fans and Blowers

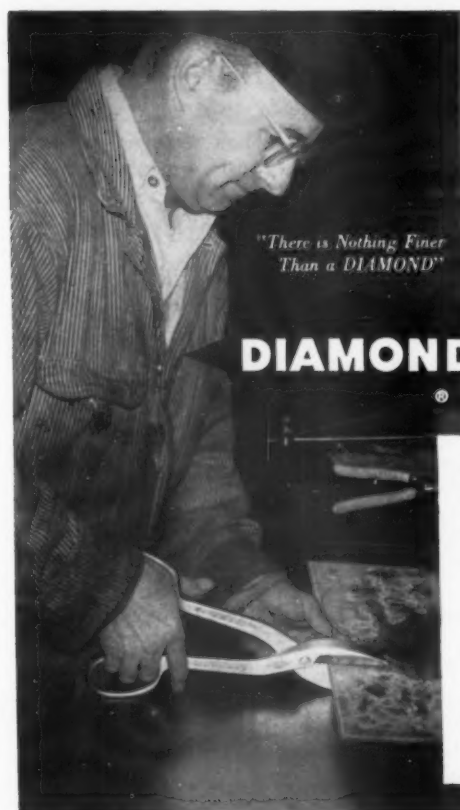
BULLETIN describes centrifugal, general ventilation, exhauster and axial airfoil fans, turbo pressure blowers, draft fans, and roof ventilators. Included is a chart showing size and capacity of each of the fans and blowers described. Fans are capable of air movements ranging from 220 to 324,960 cfm, according to the manufacturer—*Chicago Blower Corp., Dept. AA, 9867 Pacific Ave., Franklin Park, Ill.*

Machines for Light Sheet Metal Work

MANUALLY OPERATED machines and tools for light sheet metal work are illustrated in bulletin 201. Described are shears, brakes, slip roll forming machines, beading machines, power tables, adjustable bar folders, hand grooving machine, snips and shears, hammers and mallets, gutter beader, roofing double seamers, etc.—*Niagara Machine & Tool Works, Dept. AA, 637-697 Northland Ave., Buffalo 11, N. Y.*

Corrosion Resistant Plastic Equipment

BULLETIN C-15 explains how to select the proper plastic for applications involving chemical corrosion problems. Physical properties, chemical resistance, and typical equipment applications are presented in tables, pictures, diagrams and descriptions—*Haveg Industries, Inc., Dept. AA, 900 Greenbank Rd., Wilmington 8, Del.*



"There is Nothing Finer
Than a **DIAMOND**"

DIAMOND



DIAMONDS CUT EASIER

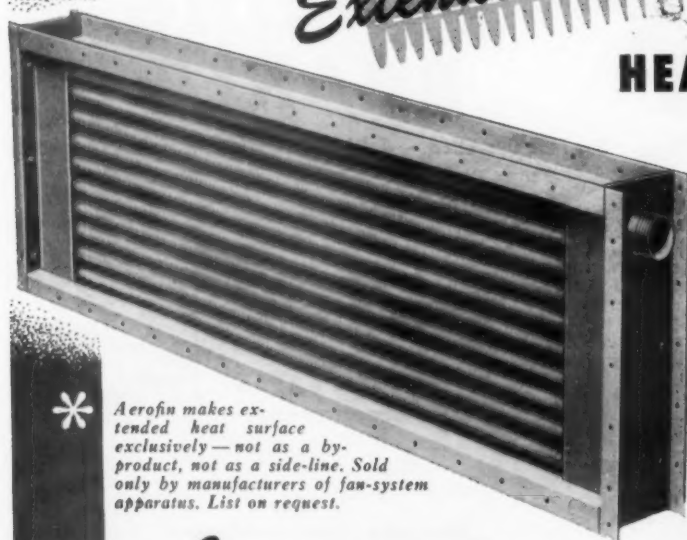
Diamalloy Snips have electronically hardened cutting edges which remain sharp long after ordinary snips become dull. Try them and see that they cut easier, with less effort—Nickel chromium plated to resist rust. Eleven sizes and patterns. Stocked by leading hardware and industrial dealers.

DIAMOND TOOL and Horseshoe Co.
DULUTH • MINNESOTA Established 1908 TORONTO • CANADA

* FIRST LINE

Extended-Surface

HEAT EXCHANGERS



Aerofin makes extended heat surface exclusively — not as a by-product, not as a side-line. Sold only by manufacturers of fan-system apparatus. List on request.

ASK THE AEROFIN MAN

Specify Aerofin and you specify high efficiency, long service life and low maintenance and service costs.

Take advantage of Aerofin's unequalled experience, production facilities, and materials-testing and design research — of Aerofin's complete engineering service at the plant and in the field.

AEROFIN CORPORATION

101 Greenway Ave., Syracuse 3, N. Y.

we hear that . . .



NEW GENERAL OFFICE BUILDING of Reynolds Metals Co. is a showcase of aluminum's many uses in modern architecture

► REYNOLDS METALS CO. has recently moved into its new general office building at Richmond, Va. The new building, a four level structure capable of housing 1000 employees, contains 1,235,000 lb of aluminum, used in a number of ways for economy, efficiency and beauty.

A system of 880 giant, color-anodized aluminum sun louvers, each 14 ft high and 22 in. wide, shield the eastern and western faces of the building from heat and glare and reduce the air conditioning load. The louvers are geared to an astronomical clock which will anticipate the movements of the sun through the year 2100 A.D. Other exterior uses of aluminum include the vertical mullions, black anodized spandrels between floors,

column casements, the entrance canopy, door frames and trim.

Approximately 215,000 lb of aluminum ductwork is used in the building, and some 20,441 sq ft of aluminum flashing has been installed. Aluminum was also used extensively in some parts of the roofing. The canopy roofs, comprising 214 squares, have Reynolds aluminum roof deck with vapor barrier over 1 in. fiber-board insulation.

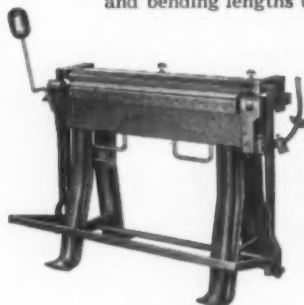
► THE FIRM OF AIR HEATERS INC., with offices in Elyria and Youngstown, has been formed by four Ohio heating men. The new company will design and build special industrial air heating equipment. Arthur A. Olson, Youngstown, a heating engineer for more than 30 years, is president. Lee Wilson, board chairman of Lee Wilson Engineering, Rocky River, will be one of the directors. T. F. Schilling and John Wehmhoff, both of Elyria, are treasurer and secretary respectively.

► CONSTRUCTION has been started on the new eastern research center of Robertshaw-Fulton Controls Co. The new center, located at King of Prussia, Pa., some 15 miles from Philadelphia, is scheduled for completion by the end of the year. Ralph V. Coles, the center's general manager, said a primary objective of the research center is to bring the advantages of advanced automation within reach of the average home owner. He cited as an example a portable control panel, about the size of



STANDARD BRAKES

Capacities up to 12-gauge sheet metal and bending lengths up to 12 feet.



FOLDER BRAKES

The simplicity and ease of operation make this a desirable machine for light sheet metal work. Seams and locks can be made efficiently. Capacity up to 20-gauge in three sizes of bending lengths of 36, 42, and 48 inches. Foot treadle clamp.



PORTABLE BRAKES

Set up shop right on the job. Capacity 20-gauge sheet metal in two sizes with bending lengths of 49 and 61 inches.

5895

Hand Operated

BENDING BRAKES

One Man Operation - Quick Adjustment - Rugged Construction



Descriptive Literature on Request.

DREIS & KRUMP
MANUFACTURING COMPANY
7404 S. Loomis Boulevard, Chicago 36, Illinois

we hear that

(Continued)

a cigar box, from which a housewife can control such household functions as heating, air conditioning, cooking, laundering, etc.



RUPERT GUSTAFSON (left) former principal of Sundstrand Engineering Co., passes keys to J. E. Rettke, president of the Nu-Way Corp. Looking on are John W. Olson, Nu-Way vice president and sales manager, and Russell E. Parmenter, secretary-treasurer

► THE NU-WAY CORP., Rock Island, Ill., has purchased a controlling interest in Sundstrand Engineering Co., Rockford, Ill. The Nu-Way firm will now manufacture Sundstrand oil burners in addition to its own line of gas and oil burners at its plant in Rock Island. Sundstrand will be operated as a division of Nu-Way, with Rupert Gustafson, former principal of Sundstrand, as manager of the division.



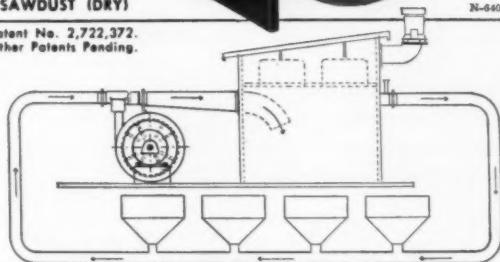
"WING CLUB" MEMBERS held a four day business-vacation meeting at Whitehall, Mich. In the front row are (l to r) Lloyd Hiddle, Bud Skeen, Cornell Bodell (Hall-Neal chief engineer), Gib Hartley, Bill Hartley, Ben Flock, Fred Boone (Hall-Neal president), Kenneth Strong and Arden Mitchner. Second row, John Cantner, Don Anglin, Carl Kern, Bill Shehorn, Cliff Cantner, Max Bowen, Tom Williams (Hall-Neal sales manager), Joe Ftacek, Jim Draggoo. Third row, Charles Haab, Wendell Fleener, Tom Smith, Don Boyer, Dave Lockwood, Joe Wellmuth, Cliff Harris, Glenn Nallinger, Bill Stiller

► THE "VICTOR WING CLUB," dealer advisory committee for the Hall-Neal Furnace Co., held its annual vacation meeting June 26-29 at the Murray Inn on

**NOW... ANY MATERIAL THAT
CAN BE MOVED BY AIR CAN
BE MOVED BY Quickdraft!**



Patent No. 2,722,372.
Other Patents Pending.



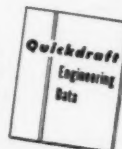
TYPICAL EXAMPLE — Q-8 Stainless Steel Quickdraft Materials Handling Unit 77" long, 40 HP 3,450 RPM motor, high-pressure turbine blower, exhausting into 13 x 15 x 15 storage room, pulling through 400 ft. of open 8" pipe. Negative static pressure readings taken 7 diameters back of Quickdraft — 17.6" WG, velocity 11,676 FPM pulling 135 ft. . . . 18.6" WG, velocity 9,306 FPM pulling 270 ft. . . . 19.3" WG, velocity 6,074 FPM pulling 400 ft.

NEW HEAVY-DUTY HIGH - PRESSURE EXHAUSTERS MOVE BULK MATERIALS QUICKLY, EFFICIENTLY, ECONOMICALLY

Bulk materials are moved without downtime for replacing fan blades, motors or bearings . . . with high pressure Quickdraft Materials Handling Units. Open or closed systems can be used. Quickdraft is also ideal for exhausting paint spray, abrasives, corrosive gases, noxious fumes and high temperatures. Models range from 6 to 30-inches in diameter. For engineering data on high-pressure Quickdraft Units for materials handling . . . heavy duty models for industrial exhausting . . . standard models for heating-plant venting . . . write today!

IMPORTANT NOTICE

For withstanding corrosive gases all Quickdraft units are available in standard acid resisting vitreous enamel, No. 316 Stainless Steel, rigid plastics (PVC), and with plastic and Fiberglass coatings.



NO MOTORS, FANS OR BEARINGS IN EXHAUST LINE!

**Quickdraft
CORPORATION**

P.O. Box 87-D • Canton 1, Ohio

Well known for
power draft units
for all types of
heating plants.

we hear that

(Continued)

White Lake, Whitehall, Mich. James Draggoo, "Wing Club" chairman, presided over the meeting. Personnel from the Hall-Neal firm attending included Fred S. Boone, president; Tom Williams, sales manager; and Cornell Bodell, chief engineer. "Wing Club" membership is based on sales performance.



NEW PLANT built by Thermo-Products, Inc., in Denton, N. C., is designed for maximum flexibility in both production and office space, will permit rapid, low cost additional expansion

► THERMO-PRODUCTS, INC., North Judson, Ind., has recently completed construction of a new plant in Denton, N. C., which will double the production capacity of the firm's present midwestern plant. Dean Culver, district manager, will be in charge of the company's operations in the Southeast.

► JOHN SPAULDING has been elected president of the Skil Corp. For the past 33 years Mr. Spaulding has been with Black & Decker Mfg. Co., where he served most recently as vice president, sales. Bolton Sullivan becomes chairman for Skil, a newly created position.

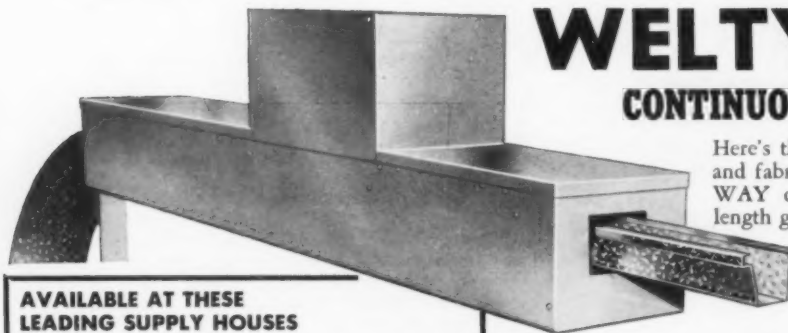
► MINNEAPOLIS-HONEYWELL REGULATOR CO. has designed a pegboard "switchboard" for use by students taking the University of Missouri's first course in automatic control this fall. Designed especially for classroom use, the "switchboard" features a variety of peg-mountable temperature control devices with color coded wires and snap-on connectors to make it easy for students to set up a residential heating and/or air conditioning control system and then simulate its operation. In case of error in calculation, a red indicating light glows. If the setup is functioning properly, other lights can be monitored to show how the various components of a system function during a heating or air conditioning cycle.

► HANDY & HARMAN now offers special small-quantity packages of silver brazing alloys for air conditioning service men and others who use such alloys only occasionally. Two types are available in the new packages — "Sil-Fos" for brazing non-ferrous metals such as copper, brass or bronze; and "Easy-Flo 45," an all-purpose alloy for brazing most ferrous metals.

Save 33⅓% or more with the new

WELTY-WAY

CONTINUOUS GUTTER MACHINE



AVAILABLE AT THESE LEADING SUPPLY HOUSES

- | | |
|--|---|
| • Atlas Supply Co.
Winston Salem, N. C. | • Moncrief-Lenoir Mfg.
Co., Houston, Texas |
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Baltimore, Md. | • Republic Metals
Chicago, Ill. |
| • J. T. Ryerson & Son
Philadelphia, Pa. | • McDermid Bros., Ltd.
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| • Leslie Bros.
Indianapolis, Ind. | • E. E. Souther Iron
Co., St. Louis, Mo. |
| • Vorys Bros., Inc.
Columbus, Ohio | |

Here's the answer to costly shop storage space and fabrication time for gutters. The WELTY-WAY continuous gutter machine makes any length gutter right on the job — 5", 12" girth.

Eliminates needless time-consuming trips to the warehouse or back to the shop and keeps your crews hanging gutters instead of waiting. Also available mounted on a weatherproof tandem trailer. Please write for literature today.

Compare these features . . .

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|--|--|
| ★ Capacities: 26 ga and 28 ga galvanized iron. | ★ Length: 8 ft., including feed table. |
| ★ Maximum Speed: With ¾ hp motor — 15 feet per minute. | ★ Width: 14 in. |
| ★ Drive: ¾ hp single phase, 110-220V, gearhead motor. | ★ Height: 11½ in., including motor, 22 in. |
| ★ Weight: 700 lbs., complete with ¾ hp gearhead motor. | |

WELTY-WAY PRODUCTS INC.

Distributors for WELTY-WAY Gutter Machines

714 FIRST AVENUE, N.W.
CEDAR RAPIDS, IOWA

CONTRACTORS!

Here's the line designed for YOU

Grant Wilson

the complete line...completely dependable!
All the thicknesses and weights you'll ever need



ASBESTOS PAPER:

A full range of thicknesses and weights, from 8 to 64 pounds per 100 square feet 18", 24" and 36" wide. 5 lb., 10 lb., 25 lb., 50 lb. and 100 lb. rolls.

ASBESTOS TAPE:

2 and 3 inch widths, 500 to 1500 foot packages, packed in cartons—easy to stock and use, no waste.



MILLBOARD:

Tough but not brittle—thicknesses from 1/8" to 1/2"—carton packed for protection until used.

AIR-CELL CORRUGATED:

1/8", 1/4", 3/8" and 1/2" thick with or without foil backing—37" wide rolls, packed in cartons.

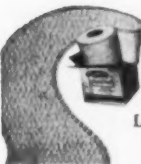


DUX-SULATION:

The world's best duct insulation—1/2" and 1" thick. Costs a little more, worth a lot more.

VIBRA-STOP:

The Metal/Fabric flexible duct connection that stops noise. Two weights of metal, both canvas and asbestos types.

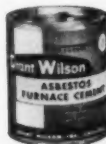


FLEXI-DUCT:

4", 6" and 8" widths of selvage edged flexible asbestos woven duct connectors. Low cost, meets Underwriters' requirements.

FURNACE CEMENT:

Smokeless, odorless, acid proof and fireproof, from 1 pound cans to 100 pound steel drums—a perfect, permanent metal-to-metal seal.



COMBUSTION CHAMBERS:

3/4 to 12 gallons per hour—quick installation, maximum combustion efficiency and long life.

THIS "BUYING & SELLING GUIDE" TELLS YOU EVERYTHING YOU NEED TO KNOW ABOUT ASBESTOS OR INSULATING MATERIALS. GET A COPY FROM YOUR WHOLESALE—IT'S FREE!



Grant Wilson inc.

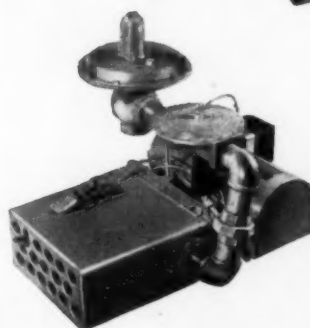
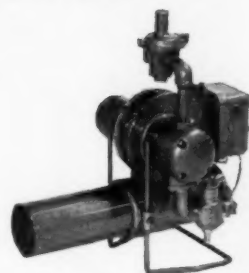
ASBESTOS and INSULATING MATERIALS

141 W. JACKSON BLVD. Dept. AA CHICAGO 4, ILLINOIS

LARGE OR SMALL Lo-BLAST POWER GAS BURNERS SAVE MONEY

THE ECONOMITE FOR RESIDENTIAL INSTALLATIONS

Capacities from
75,000 to 700,000
BTU/hr. input.



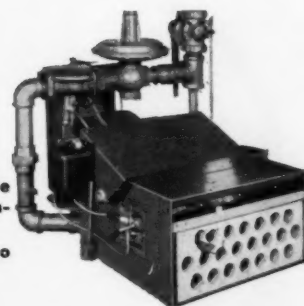
THE STANDARD Lo-BLAST

Capacities from 100,000
to 20,000,000 BTU/hr.
input.

THE DUAL FUEL Lo-BLAST

The finest gas burner...the
finest oil burner now com-
bined in one great unit.

Capacities from 600,000 to
2,500,000 BTU/hr. input.



AVERAGE 10% LESS IN OPERATING COST

Lo-BLAST Power Gas Burners save money because they eliminate the fuel waste caused by uncontrolled draft.

When a power type burner shuts off, there is no rush of draft air to carry heat up the chimney, a condition which would cause a serious fuel waste. The Lo-BLAST Burner does not depend upon natural draft, but upon air supplied by a small quiet blower. It provides combustion air only when the burner is on! When the burner shuts off, the flow of air shuts off. The heating plant thus retains much of its heat between operations.

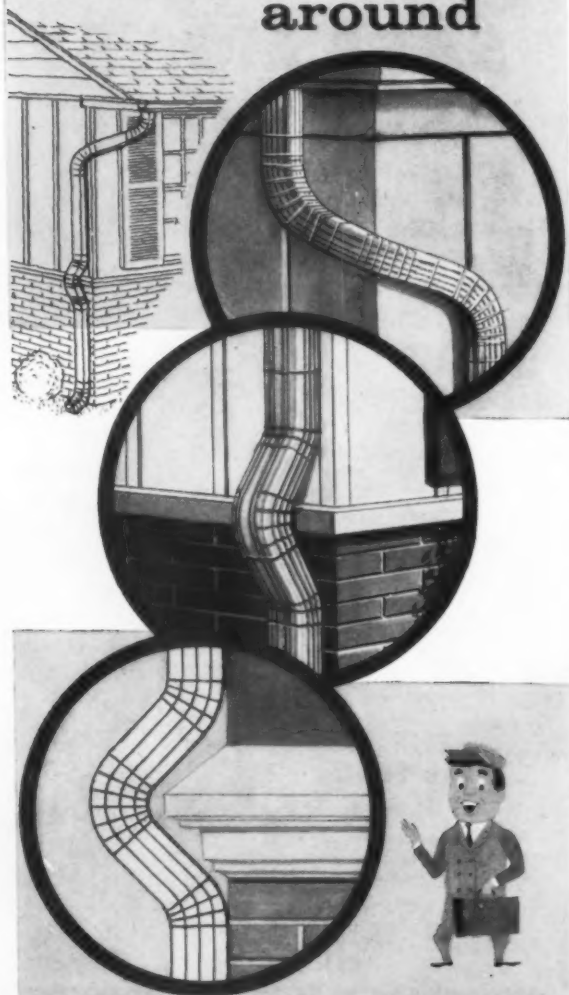
That's why Lo-BLAST Burners cost substantially less to operate.

SEND TODAY FOR COMPLETE INFORMATION

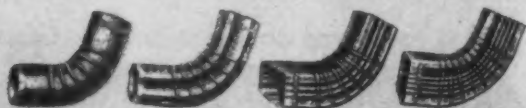
MID-CONTINENT METAL PRODUCTS CO.

1960 N. Clybourn Ave., Chicago 14, Ill.

Cincinnati Elbows really get around



Precision shaped and tapered on fully automatic machinery for positive uniformity, Cincinnati Elbows fit together quickly and surely on every installation. Hot-dipping after formation at controlled temperatures gives them a thick coating of zinc for a better-looking, longer-lasting quality. So give the home owner the best. Give him a galvanized, Cincinnati Elbow *not* an unfinished inferior product. Cincinnati Elbows are available in all sizes, angles and gauges in copper, aluminum, stainless or galvanized steel. Ask your jobber.



CINCINNATI ELBOW CO.

4730 Madison Road • Cincinnati 27, Ohio

we hear that

(Continued)



DON NICHOLS (left), president, Farquar-Nichols Co., accepts the "Master Dealer Certificate" of the Majestic Co., Inc. from Don Winegardner, vice president of Majestic

► THE FARQUAR-NICHOLS Co., Columbus, O., has been appointed central Ohio dealer for "Farquar by Majestic" heating and air conditioning products of the Majestic Co., Inc. Founded five years ago by Don Nichols, the Farquar-Nichols organization had supplied equipment manufactured by the Farquhar Co. of Wilmington, O., until February of this year when the Farquhar plant was destroyed by fire. "Farquar" brand products are now being produced on the Majestic company's assembly lines.

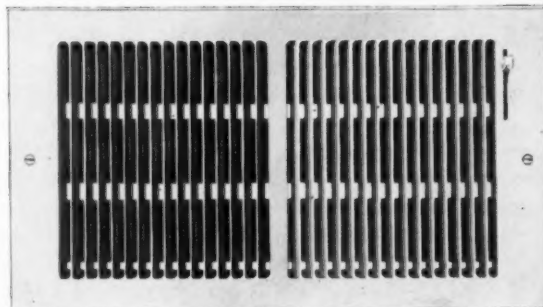
► UNITED STATES STEEL SUPPLY DIV., United States Steel Corp., has moved its Chicago warehouse operations to new and larger quarters at 13535 S. Torrence Ave. Transfer of operations, begun 18 months ago, was carried out gradually to insure uninterrupted service to customers. According to William J. Borwick, Chicago district manager, the new warehouse buildings will more than double former warehouse area.

► FOR THE SECOND CONSECUTIVE YEAR Republic Steel Corp. has received the Annual Producer Award of the American Steel Warehouse Association for the finest advertising program in the interests of America's steel service centers. Awards were also presented to Bethlehem Pacific Coast Steel Corp. and to Kaiser Steel Corp. for their special advertising efforts explaining the importance to industry of steel service centers.

► AMERICAN AIR FILTER Co.'s New York City branch office has changed its address. Formerly located at 70 E. 45th St., the office is now at 292 Madison Ave., New York 17. The firm's eastern regional office has also moved into the Madison Ave. office.

The new A&A "AIR-MASTER" is ideal for home modernization jobs!

The most flexible air register — diffuser to reach the market in years! Only one unit to stock and install for both heating and air conditioning. An ideal replacement for registers in older homes where air conditioning systems are being added. Installs on wall or baseboard on inside or outside walls.

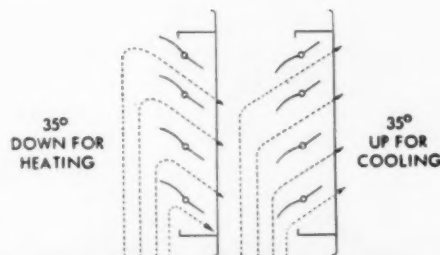


The A&A "AIR-MASTER" diffuses evenly . . . anywhere! Effortless change from summer cooling to winter heating. Air flow is adjustable by lever from 35° up to 35° down. Vertical fins are factory set to diffuse air to both sides 22 degrees, half right and half left . . . and the settings can be changed.



Write for details on the M-series "AIR-MASTER"

We make a complete line of registers, grilles and diffusers for all types of heating and air-conditioning installations. Write today for your copy of our new catalog 58, just off the press.



The **A & A REGISTER COMPANY**

8327 CLINTON ROAD • CLEVELAND 9, OHIO • ATLantic 1-6166

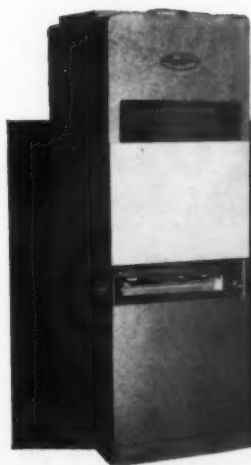
New from our **BERGER** division
two gas-fired winter air conditioners that give you

1. LOW INITIAL COST
2. LOW INSTALLATION COST
3. LOW MAINTENANCE COST

FOR PROFITS

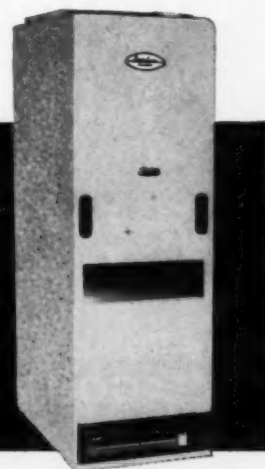
Exclusive Burnham-Berger Furnace features, design-engineered for extra efficiency, make them inexpensive but not "cheap." Time saved in easy installation and maintenance represents more money in your pocket, too.

1. V-Flame Burner directs flames toward sides of heat exchanger, gives uniform heat, requires minimum maintenance. Burner stays lit.
2. Floating "Heat-Wringer" Exchanger squeezes every degree of heat potential from fuel, eliminates expansion noises.
3. "Cradled-in-Felt" Blower and Motor assembly operation is easily accessible, can be quickly converted for cooling.
4. Slim-line design for space economy.



UTILAIRE

When floor space is at a premium, the Utilaire is the right choice for installations requiring discharge of conditioned air from top of unit. Streamlined three-tone jacket. Capacities from 75,000 to 250,000 BTU/Hr input.



INVERSAIRE

Primarily for use in the basementless home. Very compact. Air is discharged at bottom of unit for distribution in slab or crawl space. Smart two-tone jacket. Capacities from 75,000 to 200,000 BTU/Hr input.

Try them — you'll find them Easy to Sell, Easy to Install, Easy to Maintain and you make a good profit on each sale.

A.G.A. Approved • Heat Exchangers guaranteed for a period of years.

FOR COMPLETE DETAILS — write today for new, free 6-page color book.

BURNHAM CORPORATION
BERGER FURNACE DIVISION
BELLE VERNON, PA.

wholesaler doings...

► **CHARLES R. BENNETT** has sold his interest in the Armstrong Heating Supply Co., Chicago, of which he has been vice president and general manager since its establishment some 11 years ago. Mr. Bennett has been in the heating and air conditioning field for many years. Before joining the Armstrong firm, he was associated with the Landwehr Heating Co., Philadelphia, and later was purchaser of heating equipment for Montgomery Ward & Co. Mr. Bennett will announce his plans for future activities in the warm air heating and air conditioning field after returning from a vacation.



Dick Barrett

► **DICK BARRETT** has been named assistant general manager of Grand Furnace Co., Grand Rapids, Mich. Mr. Barrett joined the firm in 1954 as district sales manager covering the area surrounding the city of Grand Rapids. Grand Furnace Co.'s area extends to 54 counties in Michigan.

► **WALTER H. STEITLER**, president of Carrier-Houston Corp., has been named assistant to the president of Carrier Corp. and will now make his headquarters at the Carrier firm's Syracuse, N. Y., offices. William C. Egan, sales manager of packaged equipment in the Unitary Equipment Div., will move from Syracuse to Houston to succeed Mr. Steitler as president of the Houston distributorship.

► **DEALER-CONTRACTORS** from Alliance, Canton, Youngstown, Steubenville and Akron, as well as a few from Pittsburgh and West Virginia attended the recent sales meeting on Rheem water heaters sponsored by the Robertson Heating & Supply Co., Alliance, O. A one-and-a-half-hour program was conducted by Ed Malarkey, Ed Solby and Carl Zauner of the Rheem firm. The Alliance meeting was one of 10 sales meetings being conducted by the Rheem company.

► **BOCANER SUPPLY CO.**, Wisconsin Rapids, Wis., has been appointed a distributor of Rheem furnaces and "Rheemaire" central air conditioning. M. E. Schneider is general manager of Bocaner Supply.

► **DISTRIBUTION** of Fedders-Quigan air conditioners and dehumidifiers in the northern part of Ohio will be handled by two wholesalers — Gerlinger Equipment Co., Toledo, and Northern Ohio Appliance Corp., Cleveland.

"Exclusively Yours"



Protected Territories

The Patented OCTAGON Radiator



KALAMAZOO
FURNACE & APPLIANCE MFG. CO.
100 ROCHESTER ST. KALAMAZOO, MICH.
Phone FReside 5-2149

**41 Models of
Gas • Oil • Coal-Fired
WARM AIR CONDITIONERS**



Cleanliness • Comfort • Safety

"Exclusively yours... all the fine features that go into every Kalamazoo Furnace to make them the best buy, by far, on the market today!"

It will pay you to investigate this profit-packed story. Write for information on available territories.

**Phone • Wire • Write
TODAY!**





I SAY SIR!

**"Let's Get
the facts
about . . .**

**GALVAN
ELBOWS**



✓ Hot dipped galvanized after forming to insure Long Life and eliminates seam leaks.

✓ Easy to install because they *F-I-T.

*Fast Installation Time

GALVAN
MANUFACTURING COMPANY
NEW ALBANY, INDIANA

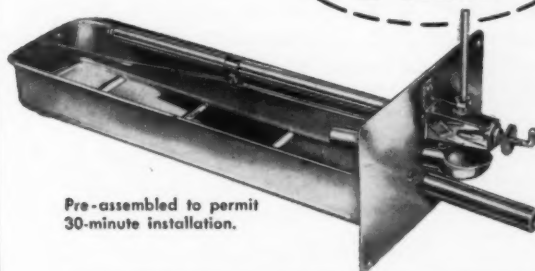
Improved 5 Ways
**FOR MORE
PROFITABLE SALES**

Vaporite

AUTOMATIC HUMIDIFIERS

SERIES 555
Fits any straight side
warm air furnace.

THE LINE WITH
**14 MODELS
& SIZES**



Pre-assembled to permit
30-minute installation.

- Lightweight assembly keeps pan level; permits plenum wall to give ample support.
- Complete adjustability of drip valve "tailors" vapor in home to "shirt sleeve" comfort.
- Non-breakable evaporator plates for supplemental vaporization.
- New positive thermostat control keeps water feed tuned to furnace temperature.
- Longer-lasting stainless steel pan cleans easily; has no protective coating to chip or to retard vaporization.

THEY ALL ADD UP TO . . .

- Fewer service callbacks.
- Assurance that humidity will balance with temperature.

Models for straight side furnaces . . .
sloping bonnet furnaces . . . counter-
flow styles for basementless houses.

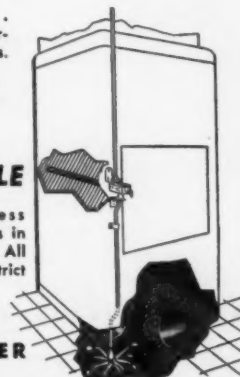
**NEW LOW COST
Field-Tested
COUNTERFLOW STYLE**

Designed especially for basementless
houses with perimeter heating. Installs in
minutes on exterior of furnace casing. All
parts furnished. No vapor pan to restrict
flow of warm air.

**WRITE FOR CATALOG AA-9.
AUTOMATIC HUMIDIFIER
COMPANY**

CEDAR FALLS

IOWA



appointments . . .

► **WILLIS STAFFORD** as sales promotion manager for Detroit Controls Div. of American-Standard. Before joining the division, Mr. Stafford directed sales promotional activities for Herman Goldberg Co., Chicago.



Willis Stafford



Robert A. Washburn

► **ROBERT A. WASHBURN** as assistant general sales manager of H. C. Little Burner Co., Inc. He was formerly regional manager for the Wedgewood Gas Range Div. of Rheem Mfg. Co.

► **RAYMOND T. STYMACKS** as sales manager for W. A. Whitney Mfg. Co. In this capacity, Mr. Stymacks will work with distributors of the Whitney company's products.

► **JOSEPH A. MEKEL** as manager of the technical service and application department of Bryant Mfg. Co. Mr. Mekel joined the company in 1956 as a service and application specialist. His new duties will include the coordination and supervision of technical service, application engineering, technical training and technical literature production.



Joseph A. Mekel

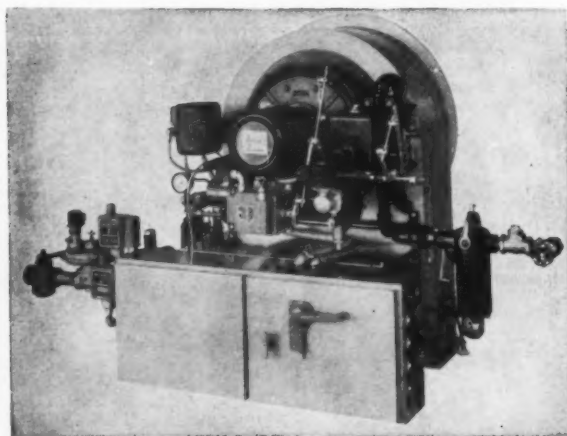


Paul J. Fountain

► **PAUL J. FOUNTAIN** as assistant manager of stainless steel sales for the Boston plant of Joseph T. Ryerson & Son, Inc. Mr. Fountain has been with the firm for 25 years. He replaces Philip B. Van Horne who becomes consultant, stainless sales.

► **DAVID B. RUTHSTROM** as national sales manager, central air conditioning, for Amana Refrigeration, Inc. Mr. Ruthstrom will be in charge of the firm's new

JOHNSON FORCED DRAFT PACKAGE-UNIT BURNERS



Completely Factory Assembled & Mounted

For firing with Oil only . . . Gas only . . . or combination Oil and Gas. Completely assembled and rigidly mounted at the factory ready for easy, inexpensive attachment to any boiler or heat receiver. They provide smoother, more efficient combustion regardless of stack conditions and fire-box pressure variations.

Powered by the world famous Johnson Model 53 Burners, these "packaged" units are available for any heating need, in sizes from 25HP to 500HP. If you want the last word in heating efficiency and economy, investigate these new Johnson Forced Draft Package Unit Burners.

Builders of fine Oil Burner Equipment since 1903

Johnson Oil Burners
S. T. JOHNSON CO.
940 Arlington Ave., Oakland 8, Calif.
Church Road, Bridgeport, Pennsylvania

ORNAMENTAL LEADER STRAPS



Sizes 3", 4", 5" 2", 3", 4"

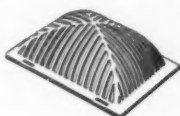
"Rival" & "Fitrite"
Ornamental Leader
Straps — Copper
& Zinc in 6 styles
SOLD THROUGH
JOBBER ONLY

"FITRITE" ROOF STRAINERS

Bronze and Aluminum

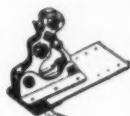


BEEHIVE
3"-8" round.
Also 3" x 4",
4" x 5"
square



3 types
6", 8", 10",
12" square

ADJUSTABLE PIPE SNOW GUARDS



"FITRITE"
3 pipes,
3/4" I.P.S.
For all
types
of steep
roofs



"PROTECTOR"
2 Pipes,
1/2" I.P.S.
For smaller
roofs, new
or old.

To Protect Trade Please Use Printed Stationery

DAVID LEVOW 698 HART ST.
BROOKLYN 21, N.Y.

SEE OUR
CATALOG
IN
WHOLESALE
DEPT.

30% Savings on Labor Cost
A Permanent Bond
A Better, Neater Job



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ST. CLAIR
Specially Formulated
INSULATION
ADHESIVE

ST. CLAIR Insulation Adhesive specially formulated for bonding insulation material to metal, supersedes pins and clips, wires, screws, and caps. Provides easier, quicker handling. For bonding immediately or up to 45 minutes later.

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CATALOG SHEET—PRICES
SAMPLE

ST. CLAIR RUBBER CO.
440 EAST JEFFERSON AVE.
DETROIT 26, MICHIGAN



"CORRECT PRACTICE in OIL HEATING"

NOW AVAILABLE TO YOU!

A complete reprint of the valuable series

by J. J. Mirabile

This practical series covers every angle of oil burner work, including arrangement of shop . . . stocking of parts . . . record-keeping . . . installation procedures . . . the handling of crews . . . how to make heating surveys . . . how to size combustion chamber . . . how to install thermostat . . . how to start the burner . . . how to use testing instruments . . . and how to operate a service department. It contains, as well, a complete list of causes and cures of oil burner troubles that will serve as a reliable guide in making service calls.

Every shop handling oil burner jobs should own this book. Full size, 8 1/2 by 11 inches — 57 pages of practical helps. Send \$1.00 for a copy to the address below.

KEENEY PUBLISHING COMPANY

6 No. Michigan Avenue

Chicago 2, Ill.

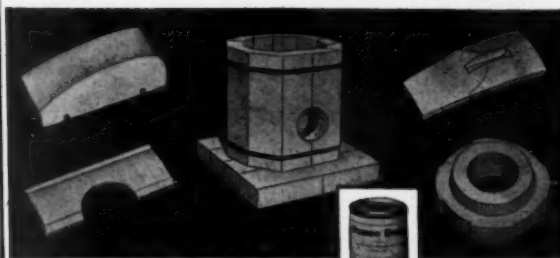


GEM
REFRACTORIES
**COMBUSTION
CHAMBERS**

GEM Combustion Chambers are engineered refractories built for performance and designed for easy, fast installation . . . highest combustion efficiency for high or low-pressure burners.

ENGINEERED TO
YOUR REQUIREMENTS

. . . GEM engineers are at your service for special designs . . . developing new units or re-designing to reduce assembly costs. Send us your prints.



GEM
Call on GEM
Engineers for
your Refractory
Shapes.



GEMCO BOND
refractory cement
insures maximum
bonding strength.

GEM CLAY FORMING, INC.
SINCE 1907 BOX 500 • SEBRING, OHIO • YE 8-2101

FREE! TURBINE VENTILATOR

a special get-acquainted offer

Order 7—
pay for 6

Order 12—
pay for 11
and get an extra
10% off dealer's net



6" to 48"

For a limited time we will give you a top-quality, ball-bearing, Triangle Turbine Ventilator absolutely free when you order six at the regular low dealer's net. If you are not completely satisfied you can return the regular order and keep the free turbine for your trouble. Write now for complete price list and get in on this special offer.

TRIANGLE ENGINEERING COMPANY

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*OVERNIGHT SHIPMENTS TO YOUR WHOLESALER

Moncrief, being strategically located in Atlanta at the Cross-Roads of the South, is in a position to make PROMPT DELIVERIES on everything you need in Pipe and Fittings for any type of heating or cooling system. Save Time and Money on Ducts, Registers, Grilles and Diffusers by ordering from your jobber Today.

Write for Free Catalogue.



MONCRIEF FURNACE COMPANY

676 Hemphill Ave., N. W., ATLANTA 1, GA.

appointments

(Continued)

sales program which is directed at the existing house market. Before joining Amana, he was New Orleans branch manager and vice president of the Vornado Distributing Co.

► J. ROBERT LEWIS as vice president in charge of engineered sales for Walton Laboratories. Primary function of Mr. Lewis' department will be to show industry how the company's method of humidification can be applied to specific manufacturing processes to reduce manufacturing costs. Mr. Lewis will also be in charge of the preparation of technical literature and bulletins on humidification.

► WILLIAM E. GEIDT as assistant sales manager of Inland Steel Co.'s sheet and strip division. Mr. Geidt replaces John B. Judkins who was appointed assistant manager of the company's tin plate and export sales division.

► RICHARD H. PENTECOST as regional sales representative in Missouri, Kansas, Oklahoma and Arkansas for Champion Furnace Pipe Co. Before joining the company, he represented Ohio Valley Hardware Co. in the same territory. He will have headquarters in the St. Louis area.



Smith's 180° Universal Brake is the answer to the need for one low cost tool that can handle a wide variety of bending and forming jobs with speed and accuracy. Designed to permit selective bending of portions of a workpiece without restriction, the Universal Brake's application and use is literally unlimited. It will handle 18 gauge mild steel 26" wide to 7 gauge 1 1/4" wide, at any angle, up to 180° in one operation. It has adjustable angle stops and back gauges to assure precise duplication of work pieces, making it a very valuable production tool. Write for illustrated circular and more details. U.S. Patent No. 2,651,349

R. E. SMITH

1121 ELIZABETH AVENUE
WAUKEGAN, ILLINOIS



Combines all these features:

- ★ EASIER INSTALLATION—4" wide flange . . . no "legs" or "posts" to get in the way.
 - ★ WEATHERPROOF—wide flange around top of stack, plus parallel baffle in rear.
 - ★ MORE FREE AREA—as certified by Metal Ventilator Institute.
 - ★ BETTER APPEARANCE—streamlined, one-piece top, and roof-hugging design.
 - ★ USE WITH FANS—8" diameter stack fits round duct.
 - ★ STURDIER CONSTRUCTION—full .025" aluminum, 26-gauge galvanized steel, screen securely attached.
- Available in galvanized steel or aluminum, the "50 Series" Roof Vent is YOUR best answer to the demand for a vent that installs without trouble, that looks and performs well, and provides top quality at the right price.



FREE BULLETIN

tells how

ANEMOTHERM Air Meter



saves in balancing air conditioning, heating and ventilating systems

The Model 60 Anemotherm Air Meter, developed by the Anemostat Corporation of America, gives you — in one convenient instrument — a simple, rapid method of balancing and checking any air system. It puts at your fingertips, by means of color-coded pushbuttons, air velocity, air temperature and static pressure. • The Anemotherm Air Meter pays for itself through time saved on only one major job. **Write for Bulletin 55 giving all the facts.**

AC 1338

ANEMOSTAT CORPORATION OF AMERICA
10 EAST 39th STREET, NEW YORK 16, N. Y.

DESIGNED FOR THE BUSY SHOP



POWERFUL • EASY TO OPERATE

WHITNEY-JENSEN BENCH PUNCHES

Write for **BIG NEW CATALOG**
WHITNEY METAL TOOL COMPANY
702 Forbes St., Rockford, Ill. Since 1910



At the grocery, the drug store, the filling station . . . everywhere your prospects go they see Reznor gas unit heaters in action. "Time", "Newsweek" and 15 other publications . . . no matter what your prospects read, they can't miss Reznor advertising. It's no wonder that Reznor . . . by far the world's largest-selling gas unit heater . . . is the one unit heater your heating prospects all know and accept.

ACCEPTANCE—just one of many reasons why Reznor dealers make more sales . . . and more money. Ask your Reznor distributor for the complete story.



REZNOR
WORLD'S LARGEST-SELLING DIRECT-FIRED
UNIT HEATERS

Reznor Manufacturing Company, 6 Union Street, Mercer, Pa.

AWAITED BY THE HEATING INDUSTRY
NOW IT'S HERE

THE OG-56 OIL-TO-GAS CONVERSION UNIT



A. G. A. TESTED
AND CERTIFIED

Developed by a famous name in heating—Banner Burner—for oil-to-gas conversion the OG-56 is superior in design and construction . . . installs quickly, easily and profitably. Now being manufactured with these outstanding advantages:

- EASY TO INSTALL—fits through four-inch oil burner sleeve
- ONE PIECE CAST IRON CONSTRUCTION of venturi and flame spreader—will not burn out.
- M. H. CONTROLS—available in Powerpile or 24-volt system. An example of the quality components throughout.

Write for complete details.

BANNER BURNER CO.

227 EAST INDIANOLA AVENUE • YOUNGSTOWN 7, OHIO

BEVERLY

Pneumatic THROATLESS SHEAR



CAPACITY
3/4" MILD STEEL
10 GA.
STAINLESS

**FASTER,
EASIER CUTTING**
to any Shape!

- Compactly built for maximum visibility and efficiency
- Operates on 35 to 150 PSI air pressure
- Adjustable power and return stroke length and speed

Beverly Pneumatic Shears combine all the advantages of Beverly Throatless Shears with fast, effortless cutting action through air cylinder operation. Air operation speeds work, permits accurate cutting to a pattern or template, as operator can concentrate on guiding work through the shear. Flow control valves permit precise adjustment of stroke speed; adjustable actuating arm controls stroke length. Foot Switch permits operator to use both hands on the work piece. Operates on 110V. 60 cycles AC and 35 to 150 PSI air pressure.

See your nearby Beverly Distributor
Write for catalog sheet and complete details.

BEVERLY SHEAR MANUFACTURING CO.
3020 W. 111th STREET • CHICAGO 43, ILLINOIS

appointments

(Continued)

► **DAVID P. HARING** as regional sales manager of the southeastern states for Typhoon Air Conditioning Co., Brooklyn, and Typhoon Heat Pump Co., Tampa, both divisions of the Hupp Corp. Mr. Haring will work with sales representatives and dealer-contractors of both organizations in 11 southeastern states. He will make his headquarters in Atlanta.



David P. Haring



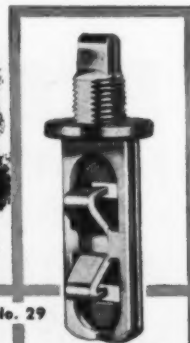
Jack Schnable

► **JACK SCHNABLE** as west coast general sales manager for Controls Co. of America. He will have headquarters at the company's plant in El Segundo, Calif. Mr. Schnable has been with the firm since 1954.

► **E. T. CUDDEBACK** as manager, general products division sales, southeast region, for Allis-Chalmers

E-Z-ONS

Cost Less
Offer MORE!



E-Z-ON "Snap-Tite" Design No. 29



Special tail piece has retractable snap end bearing . . . eliminates need to bend damper or spring duct to insert damper.



You pay less and get more features with speedy E-Z-ON damper regulators, because they're design engineered to do a better job . . . quicker.

Here's Proof: • Lower Price . . . Means Lower Cost to You
• Double Prongs Mean Double-Grip . . . No chance of swiveling
• Washer is Permanently Attached . . . No loose washer to drop or fall in pipe
• Modern "Swept" Wing Nut is Eye-appealing
• Adds new beauty to installations
• Balanced Construction . . . Prevents possible binding of damper in duct.

M. A. GERETT CORP.

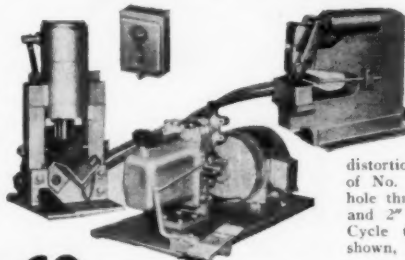
724 W. Winnemago St., Milwaukee 5, Wis.
all leading jobbers stock E-Z-ON
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Capacity $\frac{1}{4}$ " hole thru 16 gage iron. Length $8\frac{1}{2}$ ". Weight 3 lbs. Depth of throat 2". Punches and dies $\frac{1}{16}$ " to $\frac{9}{32}$ " by $\frac{1}{64}$ ". Also supplied with three punches and dies in cardboard carton.

NO. 95-B HYDRAULIC PUNCH & NO. 607 ANGLE IRON SHEAR



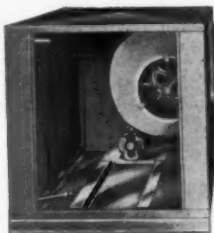
Can be used in combination as shown or either tool may be purchased separately and rigged to use in combination. Capacity of shear; $4"$ x $4"$ x $\frac{1}{4}"$ angle iron; $\frac{1}{2}"$ x $\frac{3}{4}"$ flat steel; $\frac{1}{2}"$ square or $\frac{3}{4}"$ round mild steel bars, removes piece $\frac{3}{4}"$ wide leaving no distortion to ends of bar. Capacity of No. 95B Hydraulic Press; $\frac{5}{8}"$ hole thru $\frac{1}{4}"$, $\frac{3}{8}"$ hole thru $\frac{3}{16}"$ and $2"$ hole thru $\frac{1}{2}"$ mild steel. Cycle time with 3HP motor as shown, 10 seconds.

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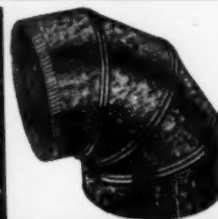
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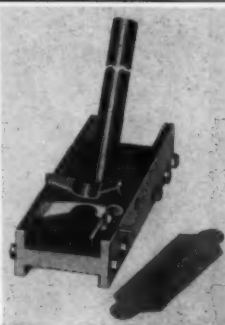
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(Continued)

Mfg. Co. He will have headquarters in the firm's regional office in Atlanta. Mr. Cuddeback joined the company in 1946.



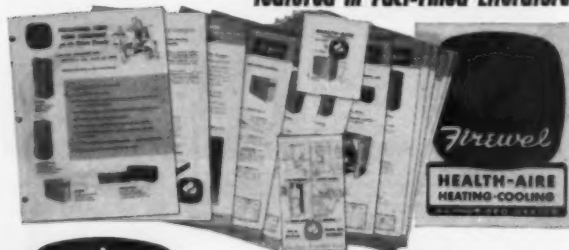
David Kishbauch William Sullivan William Gaskell

DAVID KISHBAUCH as midwest district manager and William Sullivan as eastern district manager of American-Standard's air conditioning division. William Gaskell has been appointed New England district manager. Mr. Kishbauch joined the firm in 1950 as district representative in the Philadelphia territory and has served as eastern district manager since 1956. Mr. Sullivan has been with the firm since 1954. He was a district representative in the Baltimore-Washington territory until the middle of last year when he was transferred to the New England territory. Mr. Gaskell,

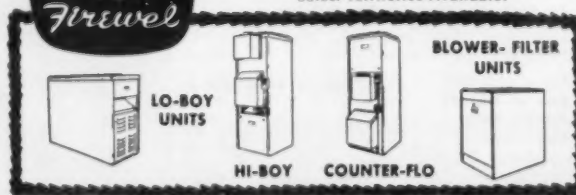
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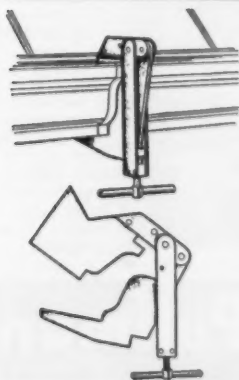
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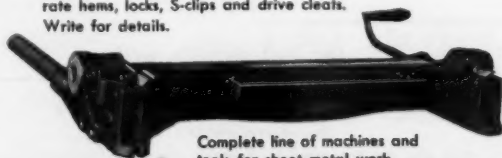
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A. Round Pipe Hanger used when joint is offset from duct
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appointments

(Continued)

who takes over the New England territory from Mr. Sullivan, was formerly with Bryant Mfg. Co., where he was sales manager, oil products.



John R. Dewey



E. W. Carraro



R. L. Dickson

► **JOHN R. DEWEY** as Los Angeles branch manager directing the sale of "Milcor" rain carrying equipment and furnace duct and fittings for Inland Steel Products Co. He was formerly sales training director at the company's main offices in Milwaukee. **E. W. Carraro** has been appointed sales representative in the New York area. He formerly served in the New York office as sales coordinator. **R. L. Dickson** will cover the southeastern states. His headquarters will be at the company offices in Atlanta.

► **ARTHUR W. SCHRIEVER** as eastern regional stainless steel specialist for Chase Brass & Copper Co., a subsidiary of Kennecott Copper Corp. He was formerly product manager, stainless steel, for the Edgcomb Steel and Aluminum Corp. Mr. Schriever will make his headquarters at the company's New York warehouse in Maspeth, L. I.

► **R. M. TOUCEY**, 306 Beverly Rd., Pittsburgh, as a sales representative for Barnebey-Cheney Co. Other new sales representatives are Harold O. Knappe and Co., 3002 Commerce St., Dallas and L. R. Gorrell, P. O. Box 5742, Raleigh, N. C.

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 Come out with
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An old established, expanding Idaho firm requires a shop foreman experienced in heavy sheet metal and industrial equipment fabrication. Must have 10 to 15 years experience in heavy sheet metal fabrication, layout and pattern development from drawings. Ability to supervise and handle men. A permanent position for a qualified man. Write stating experience, age, salary expected, to Key 1131, American Artisan, 6 N. Michigan Ave., Chicago 2, Ill.

SHEET METAL ESTIMATOR wanted. Must be competent in general sheet metal, duct work, and stainless steel fabrication — midwest location with 80,000 population, well established and equipped shop. State age, marital status, education and complete business experience. Enclose picture with first letter. Reply to key 1109, American Artisan, 6 N. Michigan Ave., Chicago 2, Ill.

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A complete set of dies and machinery for manufacturing a complete line of warm air registers; also elbow and pipe machinery. Address Key 1130, American Artisan, 6 N. Michigan Ave., Chicago 2, Ill.

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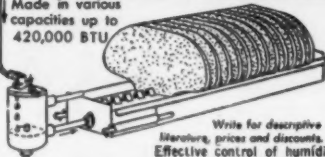
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Armstrong Fittings Co.	Burnham Corp.	Chevrolet Motor Div., General Motors Corp.	Duro-Dyne Corp.			Grayson Controls Div., Robertshaw Fulton Controls Co.	Hart & Cooley Mfg. Co. Inside Back Cover	International Heater Co.	Johnson Co., S. T.	Kirk & Blum Mfg. Co., The	Lima Register Company	Meyer & Son, Inc., Wm. W.	National-U. S. Radiator Corp.		Penn Controls, Inc.		Rezmor Mfg. Co.	Standard Stamping & Perforating Co.	Thermo-Base Div., Gerwin Industries Inc.	United Sheet Metal Co., The					
Armstrong Furnace Co.	Burnham Corp.	Chevrolet Motor Div., General Motors Corp.	Duro-Dyne Corp.			Grayson Controls Div., Robertshaw Fulton Controls Co.	Hart & Cooley Mfg. Co. Inside Back Cover	International Heater Co.	Johnson Co., S. T.	Kirk & Blum Mfg. Co., The	Lima Register Company	Meyer & Son, Inc., Wm. W.	National-U. S. Radiator Corp.		Penn Controls, Inc.		Rezmor Mfg. Co.	Standard Stamping & Perforating Co.	Thermo-Base Div., Gerwin Industries Inc.	United Sheet Metal Co., The					
Armo Adhesive Tapes, Inc.	Burnham Corp.	Chevrolet Motor Div., General Motors Corp.	Duro-Dyne Corp.			Grayson Controls Div., Robertshaw Fulton Controls Co.	Hart & Cooley Mfg. Co. Inside Back Cover	International Heater Co.	Johnson Co., S. T.	Kirk & Blum Mfg. Co., The	Lima Register Company	Meyer & Son, Inc., Wm. W.	National-U. S. Radiator Corp.		Penn Controls, Inc.		Rezmor Mfg. Co.	Standard Stamping & Perforating Co.	Thermo-Base Div., Gerwin Industries Inc.	United Sheet Metal Co., The					
Auer Register Co., The	Burnham Corp.	Chevrolet Motor Div., General Motors Corp.	Duro-Dyne Corp.			Grayson Controls Div., Robertshaw Fulton Controls Co.	Hart & Cooley Mfg. Co. Inside Back Cover	International Heater Co.	Johnson Co., S. T.	Kirk & Blum Mfg. Co., The	Lima Register Company	Meyer & Son, Inc., Wm. W.	National-U. S. Radiator Corp.		Penn Controls, Inc.		Rezmor Mfg. Co.	Standard Stamping & Perforating Co.	Thermo-Base Div., Gerwin Industries Inc.	United Sheet Metal Co., The					
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Automatic Humidifier Co.	Burnham Corp.	Chevrolet Motor Div., General Motors Corp.	Duro-Dyne Corp.			Grayson Controls Div., Robertshaw Fulton Controls Co.	Hart & Cooley Mfg. Co. Inside Back Cover	International Heater Co.	Johnson Co., S. T.	Kirk & Blum Mfg. Co., The	Lima Register Company	Meyer & Son, Inc., Wm. W.	National-U. S. Radiator Corp.		Penn Controls, Inc.		Rezmor Mfg. Co.	Standard Stamping & Perforating Co.	Thermo-Base Div., Gerwin Industries Inc.	United Sheet Metal Co., The					

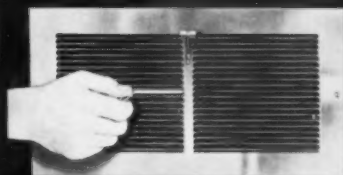
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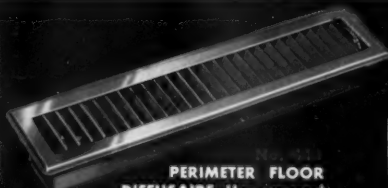
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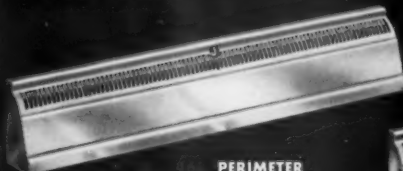
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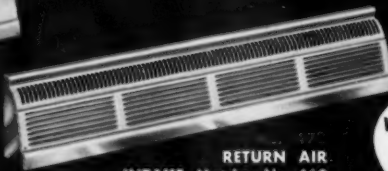
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